

# Exhibit 11

JOHNSON'S® Baby Powder | Johnsons Baby

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## JOHNSON'S® Baby Powder

Keeps skin feeling soft, fresh and comfortable



It's a classic. JOHNSON'S® Baby Powder helps to eliminate friction while keeping skin cool and comfortable. It's made of millions of tiny slippery plates that glide over each other to help reduce the irritation caused by friction.

- Helps eliminate friction
- Clinically proven to be safe, gentle and mild
- Allergy and dermatologist-tested
- Clean, classic scent

For skin that feels soft, fresh and comfortable, apply JOHNSON'S® Baby Powder close to the body, away from the face. Shake powder into your hand and smooth onto skin.

## Ingredients

Talc, Fragrance

## When to Use

Use anytime you want skin to feel soft, fresh and comfortable. For baby, use after every bath and diaper change.

## Safety

For external use only. Keep out of reach of children. Close tightly after use. Do not use on broken skin. Avoid contact with eyes. Keep powder away from child's face to avoid inhalation, which can cause breathing problems.

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Plaintiff's Exhibit  
No.

P-121

exhibitstickers.com

SHOWER to SHOWER® Absorbent Body Powder

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to SHOWER®

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The Power of Powder

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Just a sprinkle a day  
helps keep odor away  
Have you had your sprinkle today?

BUY NOW



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SHOWER to SHOWER®

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## *The Power of Powder*



A sprinkle a day helps keep odor away. And that's not the only benefit of SHOWER to SHOWER®. Here are some more!

- ♦ Your body perspires in more places than just under the arms. Use SHOWER to SHOWER® to feel dry, fresh and comfortable throughout
- ♦ Pamper yourself with a soft touch and light fragrance.
- ♦ No more stained clothes - powder provides invisible wetness protection
- ♦ With powder on, clothes glide on like a breeze and won't cling.

**Get active:**

Use before (or after) a workout or hitting the dance floor for a just-showered fresh feeling.

**Keep shoes smelling fresh:**

Just sprinkle a little powder into your shoes, boots, or sneakers to help them fresh and keep your feet dry.

**Leave sand at the beach:**

Sprinkle powder generously anywhere wet sand is clinging to your skin, then brush the sand away!

**Tame your mane:**

No time to shower? Use a sprinkle of powder in your hair between washes to tame excess oil and add a hint of fresh fragrance.

**Stay cool:**

When the heat of summer turns up, a sprinkle of SHOWER to SHOWER® helps cool you down all over!

**Feel smooth:**

Add powder to your skin after applying lotion to quickly absorb the stickiness.

**Soothe your skin:**

Sprinkle on problem areas to soothe skin that has been irritated from friction after a bikini wax to help reduce irritation and discomfort.

**Relax:**

Lightly dust your sleepwear or sheets to make bedtime peaceful and luxurious.

SHOWER to SHOWER®

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- Helps eliminate friction
- Clinically proven to be safe, gentle and mild
- Allergy and dermatologist-tested
- Clean, classic scent

### The JOHNSON'S® Difference

For skin that feels soft, fresh and comfortable, apply Johnson's Baby Powder close to the body, away from the face. Simply pour into your hand and smooth onto skin.

READ MORE

## Clinically proven to be pure, mild and gentle

From baby's first hospital bath through every special milestone, moms and healthcare professionals alike trust JOHNSON'S® baby products to provide the "best in care."

## Our Products

### Our products have stood the test of time.

Whether you're purchasing one of our timeless classics or a newer release, with JOHNSON'S® you're always getting the clinically proven gentle formulas that have made us the most trusted name in baby care for more than 100 years.

#### category

baby's skin  
bath time  
bedtime  
playtime  
natural

#### life stage

newborn  
baby  
toddler  
mother

#### baby care need

cleanse  
moisturize  
hair care  
diaper care  
sun protection  
nursing

View All



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## Add a layer of gentle, loving protection

You put your baby's safety first, and so do we. All of our baby products are formulated to cover your baby from top to toe with pure and gentle protection.



### Newborn Skin Care

Learn about her delicate skin. Your newborn's skin is a unique and an essential shield that offers protection from the outside world.

[Read more](#)

### Skin Science

- Your baby's skin is more susceptible to irritants and to changes in temperature and humidity.
- While your baby's skin is naturally more hydrated than your own, during the first 12 months of life, it also loses water more quickly.
- Your baby's skin requires more protection to keep it clean and moisturized.

See more on the **JOHNSON'S®**  
Brand Difference



Basics of Baby Skin



Sun Protection



Benefits of Infant  
Massage



Preventing Diaper  
Rash



Your Baby's Changing  
Skin



Understanding Baby  
Skin

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# Exhibit 12

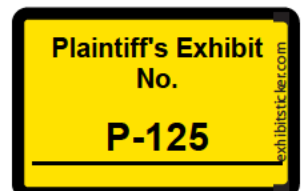
SHOWER to SHOWER® Task Force- BP Brainstorm  
July 14, 2004

**Challenge #1: Powder Category Decline**

- Explore needs states: pregnancy, menopause, "chubbiness", diabetes
- Advertise through mass transit
  - Subway reminders and subway maps
  - Retail tie-in
  - Sampling
  - Coupons on Metro Cards
- Use Duane Reade for PR – on the street or in-store with displays and jingle playing
- Radio ads – geo-targeted, radio personalities?
- Helps runners with chafing
  - Could do promotions around running events (pre-marathon bags)
  - Include in training kits they can buy
- Race for the Cure promotions
- Education to younger consumers

**Challenge #2: STS Share Decline**

- Education is key. Get people back into a daily powder routine by telling them how valuable our product is.
  - Surround Sound
  - Need to answer: Why use powder?
  - Possibly go beyond current benefits and look at anti-itch and foot care (more like GOLD BOND®)
- "Soup to nuts" account specific program is most effective; surround sound; start over explaining benefits of powder
- Redefine who our targets are (what do we mean by women 35+?)
  - Can look at men, Redacted women, heavy women
- Go beyond JOHNSON'S® Baby Powder and fragrance; they can't do things like Sport or Shimmer
- We have higher standards of talc that Private Label does not
  - Do we have to keep these higher cost standards?
  - Need to make it worth the extra cost
- Account specific programs? Maybe spot TV tied with specific markets
- Make 1 oz. more available for sale
- Vacationers more willing to try new routines/products
  - Possibly target cruises, the beach, camping, outdoors
- Potential in women's sports markets
- Make scent names more current
- Turn powder into daily regimen by partnering with other products such as women's health or even tooth brushes, something everyone sees as being used daily





- Celebrity endorsements: someone professional but would get the idea away from “Grandma’s powder”
  - Limo drivers handing out samples to get celebrities to try it
  - Make Patti LaBelle or Aritha Franklin spokeswomen
  - Send out celebrity mailings to anyone who might get hot while they work. This could also go to anchormen, like Katie Couric for example.
  - Ideally we would get the reaction that Purpose saw when Dr. Phil’s wife mentioned it
  - Could also get beauty personalities to promote it, especially with the new shimmer
- Maybe get product placed in more high-end retailers than just the Mass COT. More attention from places like Bath and Body Works and Ulta.
- Alternative forms of powder and different placements could be key
- On pack attachments for different delivery: powder puffs and brushes
- Could also attach unrelated items for different messages. For example coupons for greeting cards around Mother’s Day promotes family values and relationships.
- Message that it’s time to “grow up to adult powder”
- Direct mailings with powder samples
- In-book sampling
- Fragrance scratch-n-sniff on FSI
- Scratch and sniff labels
- Floor mats to get customers to actually look for Shower at the retailer. Might need to put them in other spots to get younger potential users down the aisle.
  - Could possibly go in personal care if the idea is that you want something to keep you fresh and clean
  - Partner with Carefree, or Catalina (same idea of our product will bring freshness)
  - Would also reinforce how everyday powder should be
- Sampling/tie-in to Weight Watchers
- We know that people usually purchase Shower on their stock up store trips, not just milk and bread runs
- Hang tags on gym bags or sneakers (or coupons) and could also cross merchandise with seasonal wear
- 101 uses: approximately 50 beauty uses? 50 sport uses? Others:
  - Play up seasonality more: use it at the beach to take off the sand
  - Takes squeaks out of hardwood floors (find interesting uses)
- Wal-Mart market basket data (Nancy f/u)
- X merchandising within J&J
  - Viactiv, Tylenol pairing up with Shower because women trust these brands
- Position to menopause specifically: “heat reliever”; “cools hot flashes”; this way lots of PR would follow

- Harris Interactive Study for PR: i.e. what do you want when you're hot? (for example: powder, a fan, a cool drink, etc., to cool you down)
- More interesting packaging, possibly a more unique cylinder shape so that customers are more willing to spend more money
- Work with bowling alleys (put powder in shoes)
- Baseball gloves, swim caps
- Menopause survival kit
  - Advertise as helping with night sweats and hot flashes
- Obesity platform
  - Focus on Redacted women and obesity
  - What makes her comfortable and confident?
- Create loyalty through frequent buyer program
- Try starting a completely unique and account specific program
- Create STS website and make connections with online retailers
- Make dollar stores better opportunity
- Can we improve our claims beyond time released fragrance?

### **Challenge #3: Aging Users, How Bring New/Younger Users**

- NASCAR displays, signage and any brand linkage
  - Did this 1996-1998 and it did well
- Seasonal approach and alternate usages (PR)
- Rally around specific dates/times of the year and relationships
- Sampling at vacation spots
- Try to market the values of a mother/daughter relationship around powder as well as father/son around Sport
- Teens could be a market because they are more concerned with fragrance and freshness than messiness
- Look at the KY model - think about a correlation between Shower and closeness among people
- Maybe look into more of a beauty focus

Redacted

- Atlanta test results?
  - Grass roots efforts effective?
- SMSI: do they market with Anderson? How leverage this org.? Redacted
- Make writing a new jingle into a competition
  - For example: A&W recent contest or like American Idol where the consumer or radio audience can select the one they like the best, with winner being put in commercial for STS

- Hospitals
  - Could be giveaways to patients, sampling
  - Sell in hospitals – patients would be willing to buy from hospital shop if you can't shower for an extended period of time; chafing/bed sores
  - More comfortable with name brand so willing to pay a little more better than hospital brand
- Get in on the college bus tour? While girls are learning about skincare guys could also be hearing the benefits of Sport powder.
- Better placement, can we get our line placed in baby or foot care?
- Partner with lower end shoe store like Payless to promote powder usage in shoes
- Product Ideas:
  - Invisible powder
  - Tinted powder
  - Tinted hair powder (already in Europe, can Beatrice get for us?)
  - Bronzer powder
  - Talk to Alexandra – learn European trends
  - Liquid powder in tubes (could also lead to different sampling mediums)
- STS conversion:  
Redacted
  - General Market needs motivation to buy STS  
Redacted
- Jingle revival event, contest, casting call; make it more relevant to new market
- Promote at teen events, sporting events
- Decrease sample size so that they can still use it but not have a short term supply; need to get the consumer to go buy more after trying
  - Salt and pepper packets
  - Ketchup packet sized
- Different shape: try unique powder cylinder (differentiate from P/L)
- Lots of Sport potential:
  - Promos on shoes or athletic gear
  - Sporting event sampling (exit/entrance samples)
  - Channel breaker display
  - Buy celebrity sponsorship
  - ESPN radio
  - Talk to Jack Weekly for sport connections
- Target brides; under stress so they need powder
  - Ads in bride magazines
- Link with a manicure/pedicure chain, beauty product
  - If it will become a beauty product, what is the message?
- Sampling at retailers like BJs, Costco, Sam's
- Education to younger consumers is important

- Times Square Billboard
- Play jingle in subway stations, hire people to look like street performers singing about Shower
- Arena signage
- Talk radio personality endorsements (like Gold Bond)
  - Can go for sports casters or even weather forecast
  - "Weather forecast brought to you by SHOWER to SHOWER®"
  - Set it up to do the weather on hot, humid days
- Weather Channel, either on line or on TV
- Other publicity styles: Vitamin water and the NY post
- Regis and Kelly samples (always under hot lights)
- Ellen DeGeneres Show – product placement/integration
  - Really "big finish" – tie-in
  - She might need it after her dancing segment
  - Help re-write the jingle
- Oxygen TV sampling, sponsorship
- Reality TV – product placement?
  - Survivor
  - Queer Eye
  - The Amazing Race
- Figure out best radio spot timing: morning or night reminders?
- "Flip book" advertising next to train lines
- Stress platform: how to keep cool under pressure
  - Promos with political campaigns
  - Tiger Woods
  - Martha Stewart
- Fashion dos and don'ts, before and after shots, what Shower will do for you
- I-com database – f/u with Jean
- New potential for wipes?
- Do a deeper dive into finding out what is important to Redacted women and the younger ones in particular
- Ulta has created edible powder, sells for about \$25/bottle and actually sells out
- Involvement with military – could be big market
- Packaging - make it gender neutral
- Sampling at men's health clubs

# Exhibit 13



Plaintiff's Exhibit  
No.

**P-49**

exhibitsticker.com



18-4RB

**We love babies.**

And we understand how to soothe and relieve baby soft skin. That's why JOHNSON'S® Baby Powder is designed to gently absorb excess moisture helping skin feel comfortable. Our incredibly soft, hypoallergenic, dermatologist and allergy-tested formula glides over skin to leave it feeling delicately soft and dry while providing soothing relief.



**WARNING: Keep powder away from child's face to avoid inhalation, which can cause breathing problems. Avoid contact with the eyes. For external use only.**



**To Use:**

1. Shake powder directly into your hand, away from the face, before smoothing onto the skin.



2. Close tightly after use, store in a cool, dry place.

**SAFETY TIP: Keep out of reach of children.**

Do not use if quality seal is broken.

Ingredients: Talc, Fragrance



**Our Babies Will Inherit Our Planet.®**  
Please Recycle.



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Talc Made in China



# Exhibit 14



JOHNSON'S® Baby Powder | Johnsons Baby

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## *The Power of Powder*



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- ♦ With powder on, clothes glide on like a breeze and won't cling.

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**Keep shoes smelling fresh:**

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**Leave sand at the beach:**

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**Tame your mane:**

No time to shower? Use a sprinkle of powder in your hair between washes to tame excess oil and add a hint of fresh fragrance.

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**Feel smooth:**

Add powder to your skin after applying lotion to quickly absorb the stickiness.

**Soothe your skin:**

Sprinkle on problem areas to soothe skin that has been irritated from friction after a bikini wax to help reduce irritation and discomfort.

**Relax:**

Lightly dust your sleepwear or sheets to make bedtime peaceful and luxurious.

SHOWER to SHOWER®

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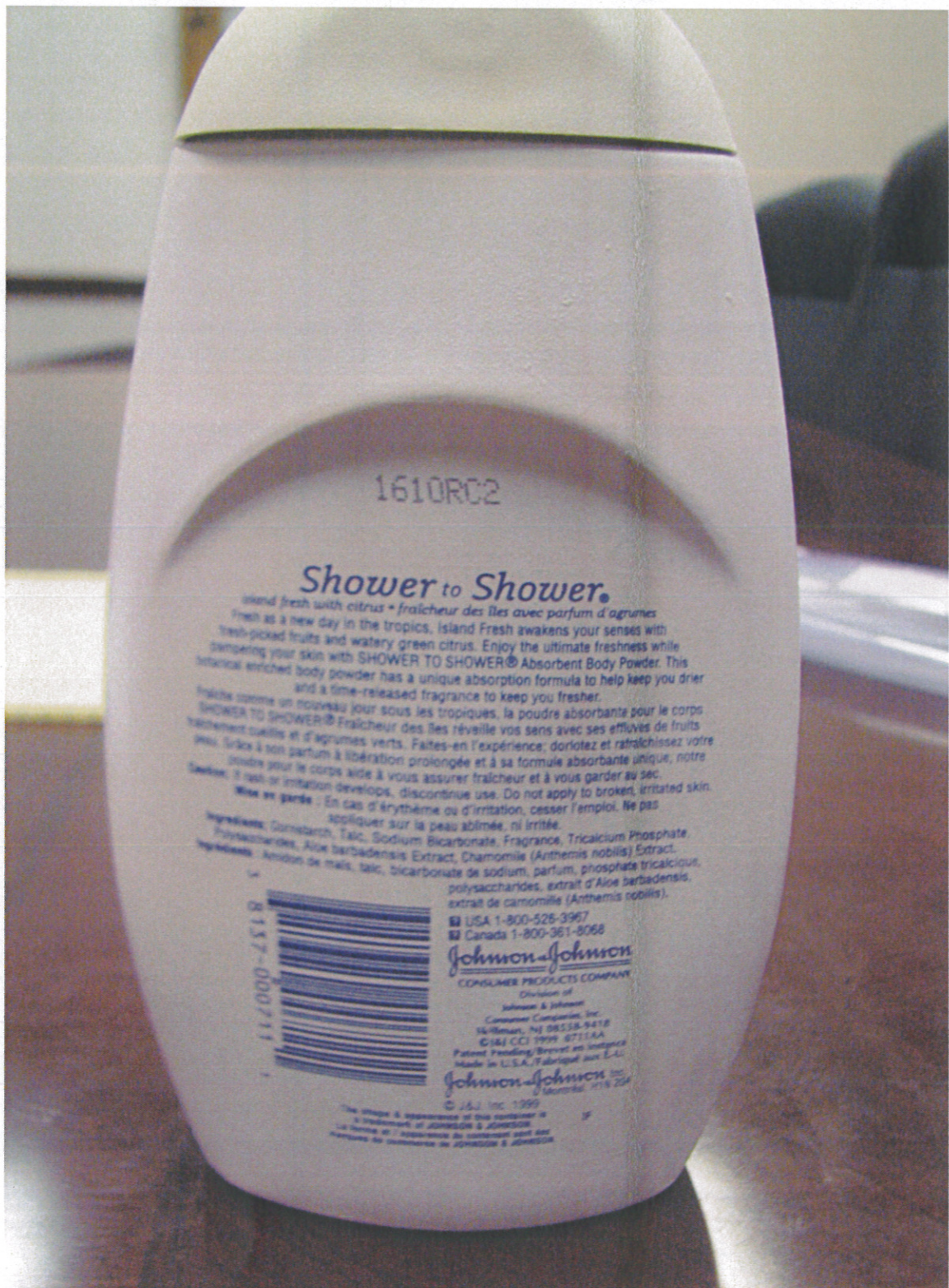
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# Exhibit 15







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# Exhibit 16

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~~ITD~~  
~~HRC~~  
~~WJ~~

Johnson & Johnson

JAN 25 REC'D  
FEB 14 REC'D

New Brunswick, N.J.

January 18, 1974

Subject: Talc/Asbestos

Meeting with Commissioner Schmidt, FDA  
January 16, 1974

Memo to File

Attendees:

for FDA: Dr. V. Wodicka, Director, Bureau of Foods  
Dr. H. Eiermann,\* Director, Division of Cosmetics  
Technology.  
Mr. J. Wenninger, Deputy Director, Division of  
Cosmetics Technology.

Later: Commissioner Schmidt and the above.

for J&J: Dr. R. Fuller, Dr. G. Hildick-Smith, Dr. W. Nashed

A preliminary meeting with Dr. Wodicka and his staff was held. We traced the history of the talc/asbestos problem: Kretchmer letter; FDA Symposium, August, 1971, where Mt. Sinai people admitted that their analysis based on optical microscopy of our product was wrong and that Johnson & Johnson Baby Powder was the best talc available; and we mentioned the voluminous data which we had shared with the FDA. Dr. Eiermann and Mr. Wenninger corroborated our presentations to Dr. Wodicka.

Dr. Eiermann then said that he has reviewed the CTFA Round-Robin test results with his microscopist, Mr. Schulze, and said that Mr. Schulze still thinks the method is valid. We pointed out that we believe that the method has some basic flaws as outlined in the CTFA comment; however, we believe that a cooperative program between FDA and industry should result in a practical solution to the problem.

\* Former J&J employee in Brazil.



Memo to File

- 2 -

January 18, 1974

We pointed out that we had developed a DTA method capable of measuring 1% chrysotile and we also believe that a step scan x-ray method can be used to detect 0.2% tremolite.

Dr. Eiermann said that they have obtained DTA equipment and x-ray equipment and that he has some reservation about allowing 1% chrysotile.

We volunteered to cooperate with his scientists in the development of the method for DTA and promised to provide a copy of a proposed publication regarding this method.

Notes  
Humm  
Dr. Eiermann said that his main interest at this time is to find what level of dust exposure occurs in the process of dusting a baby and that they would like to use the data to calculate allowable asbestos using 5 fibers per ml (OSHA limit) for safe exposure in the mines. We promised to provide a report on the talc dust exposure of babies. We pointed out that the data we have is based on exaggerated dusting of a whole can of baby powder and that the amount generated, namely 345 mg/ m<sup>3</sup> may be excessive. We said that we are currently attempting to make the same calculation he proposed to the data. Our very preliminary calculation indicates that substantial asbestos can be allowed safely in a baby powder.

Dr. Wodicka appeared skeptical of Dr. Eiermann's approach to the problem. He implied that what is safe for a miner may not be safe for a baby.

Dr. Eiermann also mentioned that they were carrying out some studies in-house using an air sampler to assess the dust exposure and were having some difficulties in determining it.

Dr. Hildick-Smith reviewed the current knowledge on the biology of talc and indicated that talc had a low order of toxicity when evaluated in cell culture systems, that animal studies had been conducted which confirmed the cell culture studies, and that long-range inhalation studies in rats by MRC and in hamsters by J&J were being conducted in England and in the U.S.A. and that the results will be available in 1975. It was pointed out that two separate epidemiological studies had been conducted on talc miners, one by Dr. Kleinfeld and the other by Dr. Green at the University of Vermont School of Medicine in Burlington. The data obtained from both studies indicated that, where miners in the Kleinfeld study had been exposed to talc dust for an average of about 17 years and in the Green study for about 7 years, there appeared to be no significant impairment of the miners' health. Utilizing these data, the known information

Memo to File

- 3 -

January 18, 1974

concerning the amount of talc to which infants were exposed and their respiratory capacity, miners were exposed for a period of approximately 1,000 times that of an infant. The dose respired by the miner is approximately 11,000 times that respired by the infant. It was brought out that critical review of all the world literature failed to show any evidence of adverse health effects following the normal use of cosmetic talcs.

Dr. Hildick-Smith indicated that he was writing a review article on talc and that a copy of the manuscript would be sent to the FDA for their files.

*Hummmmm!*  
Dr. Fuller stressed Johnson & Johnson's policy of full cooperation with FDA and that if the results of any scientific studies show any question of safety of talc, Johnson & Johnson will not hesitate to take it off the market.

A meeting was then held in Dr. Schmidt's office. The proceedings were similar to that which took place in Dr. Wodicka's office.

Dr. Schmidt asked for information on our Vermont mine: location (Windsor, Vt.), kind of talc (platey talc), processing (froth flotation to maximize platey talc). He wanted to know whether we sell our talc to other companies (cosmetic beneficiated grade is not sold to other companies; other locations in the Windsor mine are used to supply industrial grade talc).

Dr. Fuller pointed out that our meeting is not a "crisis" meeting. The Commissioner appeared to appreciate that. Dr. Fuller again stressed Johnson & Johnson's policy of full cooperation with the FDA which preceded the Kretchmer incident, namely, the Tenovus report where Dr. Hildick-Smith had called Dr. Simmons at the time we first heard of it. We reviewed briefly the Tenovus data (unreliable talc particle identification technique, presence of mineral particles in the tissue-fixing baths, lack of formal education of the principal investigator).

Dr. Hildick-Smith also commented briefly on the article relating stomach cancer in the Japanese and pointed out that this was generally discredited by scientists and that there was no information in the world literature or in animal studies completed to indicate talc produced cancer.

✓ Dr. Schmidt said that the FDA could come under pressure from consumer or other groups and that they were particularly vulnerable when there were minimal, inadequate or no scientific data in a specific area. He had, however, developed a tactic by which he publishes in the Federal Register any scientific attack on the FDA in the hope that members of the scientific community could provide data to assist the FDA.

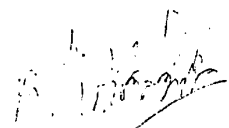
Memo to File

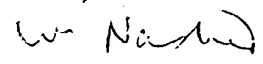
- 4 -

January 18, 1974

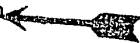
He appreciated the Johnson & Johnson visit and our expression of interest to assist the FDA where possible. He welcomed the opportunity of having a source of scientific information on which he could rely if the occasion arose. He indicated the immediate interest of the FDA in developing a method for assessing asbestos in talc. He pointed out that additional information being developed by Johnson & Johnson and others would meet the possible future need if talc per se is attacked. As there were some scientific data and good scientific studies in hand, the scientific community would be well prepared to withstand any onslaught concerning talc.

The meeting ended on a very cordial note and appreciation by the FDA officials of Johnson & Johnson's visit and willingness to cooperate with the agency in developing methods and providing information concerning talc technology.

  
G. Hildick-Smith

  
W. Nashed

cw

cc: Dr. R. A. Fuller  
Dr. A. Goudie  
Dr. G. Hildick-Smith  
Mr. D. D. Johnston   
Mr. G. Lee  
Dr. D. Petterson  
Mr. S. Smoyer  
Dr. T. Shelley  
Mr. H. Stolzer

# Exhibit 17

Johnson & Johnson

*Return to*  
New Brunswick, N.J.  
December 3, 1975

**Subject:** Talc in the Ovaries

Dr. D. R. Petterson

Attached is a letter received from Dr. Keith Griffiths, who is Director of the Tenovus Institute for Cancer Research in Cardiff. The letter arrived in response to a small donation I had sent the Cardiff Scientific Society with the main objective of trying to determine what research is in actual fact being conducted at the Tenovus Institute.

It might be of value to identify the precise scientific data available to Tenovus concerning talc and ovarian cells. We are not budgeted to support the research outlined and shall so inform Griffith if this meets with your approval.

Gavin Hildick-Smith

GHS/cd  
Att.

cc:  
Mr. G. Lee  
Dr. F. R. Rolle  
Dr. B. Semple

→ G. Lee,

*It would be nice*

*to know ahead of time, just what Gavin intends doing. Did you know he was planning to donate to the C.S.S.? Do his certainly given supports the opening to put us on notice re the talc/ovary problem.*

*No - we were not asked. We have since this at the advisory group meeting.*

Plaintiff's Exhibit  
No.

P-55

# Exhibit 18

Talc and Ovarian Cancer

Supplementary questions and answers  
Prepared 20.10.97

Background

On 22nd October 1997, Face Value will air a programme, which will discuss a potential link between talc and ovarian cancer. This issue has been around for many years and there has been a full FDA review of all of the research available. This review has concluded that there is absolutely no causal link between talc and ovarian cancer. This is an industry matter and is not specific to Johnson's Baby powder. The CPTA has issued a full statement on the matter and Johnson & Johnson supports this statement.

The purpose of this document is to supplement the question and answer sheet already issued by J&J corporate. It covers issues specific to what may be aired during the Face Value programme. Any questions on the link to ovarian cancer or the similarities to asbestos are contained within the corporate Q&A also attached.

Above all, the company is absolutely sure that Johnson's Baby Powder is perfectly safe for use on any part of the body, in line with the directions on the pack. There is no link to ovarian cancer either implied or actual and this is the conclusion of the independent review carried out by the FDA. Trust and safety is the basis of our company reputation and if we believed there was even the slightest risk associated with the normal use of Johnson's Baby Powder, we would not hesitate to take the necessary action.

Questions and answers in response to recent publicity. (numbered from Q.38 onwards which follows the corporate Q&A sheet)

Q.38: If you are saying that there is no link to ovarian cancer then why did the programme suggest that there is - they wouldn't just make it up would they?

A.38: That is a good question and we have challenged ourselves on the same issue. We are entirely confident of the safety of our product and all we can do to reassure you is tell you the facts: and that is that there is absolutely no link between talc and ovarian cancer. This is the view expressed by the independent FDA working party who have reviewed all of the research and is supported by the CPTA.

Q.39: Are you saying that the research is not valid in its conclusions?

A.39: What is most important here is what the independent working party who have reviewed this research have concluded. They have concluded that there is no link to ovarian cancer either implied or actual. We have also carried out our own review of the data and we support the conclusions drawn by the FDA.

Q.40: Why did Johnson & Johnson decline to be interviewed by Face Value?

A.40: The talc issue is a general industry issue and is not specific to Johnson's Baby Powder. The CPTA issued an industry response to Face Value, which we support. We are more than happy to talk to our consumers directly (as

Plaintiff's Exhibit  
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I am doing with you now) but it is not our corporate policy to talk to our consumers through the medium of television programmes like Face Value.

Q.41: Why did the CPTA statement which J&J supports make no reference to the fact that the FDA went on to conclude that people should "err on the side of caution"?

A.41: The written FDA statements, which the CPTA have relied on to draw their conclusions, do not contain any such reference. If this is a personal or subsequent view verbalised by any member of the FDA then they are entitled to express that view. Ultimately we all have to take whatever action is right for ourselves. What I can assure you of however, is that Johnson's Baby Powder is perfectly safe for normal use and that the FDA formal conclusions were that there is absolutely no link either implied or actual to ovarian cancer.

Q.42: If you have known about this research since 1994 or before, why didn't you tell consumers before now or were you just worried about your sales?

A.42: We believe that our first responsibility is always to our consumers. This research has always been in the public domain and we have made no attempt to hide it. We have made every attempt to understand its implications for our consumers and can assure you that independent reviews of the research carried out by the FDA have concluded that there is no link to ovarian cancer. Trust is the basis of our company reputation and I can assure you that if there was the slightest risk to our consumers we would be the first to withdraw the product. We have done this before with Tylenol in the US.

Q.43: If there is even the slightest risk of a link to ovarian cancer why do you say that the product is safe to use on babies, particularly on babies' bottoms?

A.43: We can assure you that there is not even the slightest risk of a link to ovarian cancer. Independent studies have proven that talc cannot migrate from any area of the body to the ovaries. Johnson's Baby Powder is perfectly safe to use on your baby, in line with the normal directions on the pack.

Q.44: Why would Face Value make a programme on this subject if there is nothing to it - surely I should believe them more than I should believe you because they have the consumers' interests at heart?

A.44: That is a great question and I cannot answer it for you. Our opinion is that it is the independent conclusions of the FDA working party that are the most reliable source of the truth in this matter. This working party concluded that there was absolutely no link between the use of talc and ovarian cancer. Ultimately you have to judge the accuracy of the information you have received from the media and from us. However, I can assure you that we always have our consumers' interests at heart and that if there was even the slightest risk we would act accordingly.

Q.45: I don't care if you think that there is absolutely no risk. You should have made consumers aware of the issue - there should be directions on the pack to indicate that it is not suitable for use on certain parts of the body. Are you going to do this in the future?

A.45: Ultimately, it is not what we think that matters, but what independent sources such as the FDA think. We are extremely confident in the FDA working party conclusion that there is absolutely no risk of ovarian cancer. Johnson's Baby Powder is safe for use, in line with the normal directions on pack, on any



part of the body. Research has proven that talc cannot migrate from any part of the body to the ovaries. We are extremely confident in the safety of our product and see no need to make any changes to the current packaging.

Q.46: I have just been diagnosed with ovarian cancer and I have been using Johnson's Baby Powder for years. I am extremely angry that you knew about this years ago and that you did not inform the public. I want to know how you are going to compensate me.

A.46: I am extremely sorry to hear about your recent diagnosis. However I can assure you that there is absolutely no link between Johnson's Baby powder and ovarian cancer. This is not just our view but is supported by an independent review of all of the research available conducted by the FDA.

If the consumer is still unhappy with this response and insistent upon what we are going to do to compensate her then the appropriate response is...

Once again, I am very sorry to hear that you are suffering from ovarian cancer, however I can assure you that our product is not at fault. If you wish to take this further then that course of action is up to you and we will respond accordingly.

Q.47: How can you be totally sure that talc does not cause ovarian cancer?

A.47: We are absolutely sure for a number of reasons: firstly, an independent review of all the research available, conducted by the FDA has concluded that there is no link between talc and ovarian cancer. Secondly, in the UK and the U.S where talc is commonly used, the incidence of ovarian cancer is 15 / 100,000 women whereas in Scandanavia where talc is not used by women the incidence of ovarian cancer is higher at 21 / 100,000 women. The higher incidence of ovarian cancer in Scandanavia is linked to diet and has no connection to the use of talc.. We can absolutely assure you that there is no known or implied link between talc and ovarian cancer. If there was we would be the first to take appropriate action for the safety of our consumers.

considered to be

REDACTED

A large rectangular area filled with a dense, repeating pattern of small, stylized, light blue and white geometric shapes, resembling a textured surface or a decorative background. The pattern consists of many small, interconnected shapes that create a complex, woven appearance. The colors are primarily light blue and white, with some darker blue accents. The overall effect is a highly detailed, almost abstract texture that covers the entire rectangular area.

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Journal Pre-proof

# Exhibit 19

*Johnson & Johnson*

202002

**New Brunswick, N. J.**  
February 21, 1964

**Subject:** Cornstarch Development

Memo for File:

Report on Meeting: February 21, 1964

Present: R. E. Faust (2) R. G. Schoel (2)  
R. L. Sundberg W. H. Ashton

Consumer Research Test - Staley's CREAM vs. JOHNSON'S  
Baby Powder

It was agreed that we will prepare the 440 samples R. Schoel requested earlier (1/2/64). The test is to determine a preference rating of our regular JOHNSON'S Baby Powder vs. the Staley product CREAM Brand cornstarch baby powder.

One of the four items requested was 110 units of the Staley product repackaged in our own new plastic container. Dr. Faust directed that this request cannot be carried out since the embossed copy declares the contents are talc. It was agreed that this problem can be eliminated if special labels declare the contents to read "talc and/or cornstarch." Mr. Schoel will finalize all labels with Dr. Faust.

Ashton will determine whether sufficient plain plastic packages or unembossed varieties are available in J&J for this test. Failing that, the supplier's inventory will be checked. In the event no suitable plastic packages are available, then metal containers will be acquired for this small test only.

Product Development

A) Mr. Schoel requested we immediately undertake the formulation and development of a cornstarch product which is inexpensive and free-flowing. This was discussed in some detail and the following decisions were reached:

CENTRAL FILE

APR 20 1972

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Memo for File

-2-

February 21, 1964

- 1) The product will use our standard perfume, P-5. It will be compounded at a level which gives an aroma match to our standard talc article.
- 2) The product will not contain an antiseptic.
- 3) The raw material cost of the Staley product is estimated to be 6.7¢/lb. of product plus perfume.
- 4) We will develop such a product which either equals or exceeds Staley's characteristics.
- 5) No buffer action is considered.

B) The formulation will be developed with either of National Starch Products U.S.P. grades of cornstarch. The regular variety runs \$5.95/100 wt. whereas the bleached variety runs \$6.50/100 wt. f.o.b. Indianapolis. Additives which are believed to impart fluidity appear in the price range of \$14.00 to \$20.60 per 100 wt. Thus we optimistically expect to be able to evolve a formulation closely competitive to the Staley article, plus perfume cost.

Additives to be explored within the formulation and product character parameters are:

- 1) Dry Flo - A low substituted Al salt of mildly treated cornstarch.
- 2)  $MgCO_3$  - This is the Staley fluidizer.
- 3) MgO
- 4) Tricalcium Phosphate
- 5) Cab-O-Sil
- 6) Any other which comes to attention.



Memo for File

-3-

February 21, 1964

Of these additives, the Dry Flo has very appealing tone because it would open the door to a merchandising advantage which could refer to an all starch product, i.e., a blend of it with U.S.P. Cornstarch would have no added inorganics.

Since the meeting, Ashton established the largest commercial uses of Dry Flo are in Vitamin A manufacture (5% in finished product) and as a condom lubricant where it replaced talc because it was found to be absorbed safely in the vagina whereas, of course, talc was not.

C) Programming - The necessary raw materials will be ordered immediately and the work begun in line with a program chart which was presented.

*W. H. Ashton/sg*  
W. H. Ashton

sg

**JNJ000265536**

**Metadata**

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# Exhibit 20

<p style="text-align: right;">Page 1</p> <p>SUPERIOR COURT OF NEW JERSEY LAW DIVISION: MIDDLESEX COUNTY DOCKET NO. MID-L-00598-18 AS</p> <p>LORETTA SELVAGGIO, DEPOSITION UNDER ORAL EXAMINATION Plaintiff, OF NANCY MUSCO vs. BRENNTAG NORTH AMERICA, et al., Defendants.</p> <p>TRANSCRIPT of the deposition of the witness, called for Oral Examination in the above-captioned matter, said deposition being taken pursuant to Superior Court Rules of Practice and Procedure by and before MARC BRODY, a Notary Public and Certified Shorthand Reporter of the State of New Jersey, at the law offices of FOX ROTHSCHILD, 997 Lenox Drive, Lawrenceville, New Jersey, on Wednesday, November 28, 2018, commencing at approximately 10:00 in the forenoon.</p> <p>BRODY DEPOSITION SERVICES 235 East Broad Street, Suite 1 Westfield, New Jersey 07090 Phone: 908.789.2000 Fax: 908-789-2007</p>	<p style="text-align: right;">Page 3</p> <p>1 A P P E A R A N C E S (Cont'd): 2 3 HOAGLAND, LONGO, MORAN, DUNST &amp; DOUKAS, LLP 4 40 Paterson Street 5 New Brunswick, New Jersey 08903 6 732-545-4717 7 BY: AMIE C. KALAC, ESQ. 8 Attorneys for Defendant, Whittaker, Clark and Daniels 9 10 11 ALSO PRESENT: Ray Moore, Videographer 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p>
<p style="text-align: right;">Page 2</p> <p>1 A P P E A R A N C E S: 2 3 COHEN, PLACITELLA &amp; ROTH, P.C. 4 127 Maple Avenue 5 Red Bank, New Jersey 07701 6 732-747-9003 7 BY: CHRISTOPHER PLACITELLA, ESQ. 8 Attorneys for Plaintiff 9 10 RAWLE &amp; HENDERSON, LLP 11 401 Route 73 North, Suite 200 12 Marlton, New Jersey 08053 13 856-596-4800 14 BY: SEBASTIAN A. GOLDSTEIN, ESQ. 15 Attorneys for Defendants, Cyprus Amax, 16 Imerys Talc America 17 18 ORRICK, HERRINGTON &amp; SUTCLIFFE, LLP 19 51 West 52nd Street 20 New York, New York 10019 21 212-506-3604 22 BY: PAIGE PAVONE, ESQ. AND KATHY O'CONNOR, ESQ.</p>	<p style="text-align: right;">Page 4</p> <p>1 I N D E X 2 WITNESS 3 NANCY MUSCO 4 Direct by Mr. Placitella 6 5 Cross by Ms. O'Connor 204 6 Redirect by Ms. Placitella 214 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p>

Page 5	Page 7
<p>1 EXHIBITS</p> <p>2 NO. DESCRIPTION PAGE</p> <p>3</p> <p>4 Musco-1 Handwritten document 91</p> <p>5 Musco-2 Binder of documents 131</p> <p>6 Musco-3 Five pages legal size Chart 136</p> <p>7</p> <p>8 Musco-4 List of J&amp;J employees 202</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p>1 before?</p> <p>2 A Yes. Once before.</p> <p>3 Q What kind of case was that?</p> <p>4 A That was Johnson's Baby Oil.</p> <p>5 MR. PLACITELLA: Before we get</p> <p>6 started, is the witness here testifying as Nancy</p> <p>7 Musco, a former employee of Johnson and Johnson that</p> <p>8 I subpoenaed, or as a representative of Johnson and</p> <p>9 Johnson?</p> <p>10 MS. O'CONNOR: You are asking me</p> <p>11 that question?</p> <p>12 MR. PLACITELLA: Yes. The reason I</p> <p>13 ask is because I got an email from counsel for</p> <p>14 Johnson and Johnson that said that Ms. Musco was</p> <p>15 being produced here today as a representative for</p> <p>16 Johnson and Johnson.</p> <p>17 MS. O'CONNOR: I think that was not</p> <p>18 what was intended. She is here in her personal</p> <p>19 capacity as a former employee of Johnson and</p> <p>20 Johnson. She is not here on behalf of the</p> <p>21 company as a person most knowledgeable.</p> <p>22 MR. PLACITELLA: That's fine. I</p> <p>23 wanted to make sure.</p> <p>24</p> <p>25 Q Ms. Musco, are you represented by counsel</p>
Page 6	Page 8
<p>1 THE VIDEOGRAPHER: We are on the record my</p> <p>2 name is Ray Moore representing Dynamic Evidence. The</p> <p>3 date today is November 28, 2018. The time is approximately</p> <p>4 10:02 a.m. The name of the witness is Nancy Musco.</p> <p>5 At this time the attorneys present in the room</p> <p>6 will identify themselves and the parties they represent.</p> <p>7 MR. PLACITELLA: Chris Placitella on</p> <p>8 behalf of the plaintiffs.</p> <p>9 MS. KALAC: Amie Kalac from Hoagland, Longo</p> <p>10 on behalf of Whittaker, Clark and Daniels.</p> <p>11 MR. GOLDSTEIN: Sebastian Goldstein from</p> <p>12 Rawle and Henderson on behalf of Cyprus Amax.</p> <p>13 MS. O'CONNOR: Kathy O'Connor from Orrick,</p> <p>14 Herrington &amp; Sutcliffe on behalf of Johnson and Johnson.</p> <p>15 MS. PAVONE: Paige Pavone from Orrick also</p> <p>16 on behalf of Johnson and Johnson.</p> <p>17 The court reporter will now swear in the</p> <p>18 witness.</p> <p>19 N A N C Y M U S C O ,</p> <p>20 13 Mershon Lane, Plainsboro, New Jersey, sworn.</p> <p>21 DIRECT EXAMINATION BY MR. PLACITELLA:</p> <p>22 Q Ms. Musco, how are you?</p> <p>23 A Good morning, I'm fine.</p> <p>24 Q We are here for purposes of taking your</p> <p>25 deposition. Have you ever had your deposition taken</p>	<p>1 here today?</p> <p>2 A I'm with counsel representing that is</p> <p>3 Johnson and Johnson.</p> <p>4 MS. O'CONNOR: As well as the</p> <p>5 witness.</p> <p>6 Q And are you paying for your</p> <p>7 representation?</p> <p>8 A No.</p> <p>9 Q Is counsel to your left your lawyer or</p> <p>10 only for purposes of this deposition?</p> <p>11 A Only for purposes of the deposition.</p> <p>12 Q When did you retain her?</p> <p>13 A I guess it would be about a month ago.</p> <p>14 Q What were the terms of that retainer?</p> <p>15 A The terms were to prepare for this</p> <p>16 deposition and to do the deposition.</p> <p>17 MS. O'CONNOR: I want to be careful.</p> <p>18 We are getting close to privilege.</p> <p>19 Q Your current job is what?</p> <p>20 A I'm retired now, but I work for Dress for</p> <p>21 Success, Central, New Jersey as program manager.</p> <p>22 Q Do you have any ongoing relationship with</p> <p>23 Johnson and Johnson?</p> <p>24 A Not at this time, only retiree.</p> <p>25 Q You currently live in Plainsboro?</p>

Page 9	Page 11
<p>1 A Yes.</p> <p>2 Q And where is that?</p> <p>3 A That is in Central New Jersey.</p> <p>4 Q The address?</p> <p>5 A 13 Mershon Lane.</p> <p>6 Q You went to school at the University of</p> <p>7 Bridgeport?</p> <p>8 A That's correct.</p> <p>9 Q Is that where you got your nursing degree?</p> <p>10 A Yes.</p> <p>11 Q And you graduated when?</p> <p>12 A 1974.</p> <p>13 Q At some point in time you went to the</p> <p>14 Wharton School for a management certificate. Is</p> <p>15 that fair?</p> <p>16 A Yes.</p> <p>17 Q Any other education besides that?</p> <p>18 A No.</p> <p>19 Q When did you leave Johnson and Johnson?</p> <p>20 A 2011.</p> <p>21 Q And you began when?</p> <p>22 A 1981.</p> <p>23 Q Can you trace for me the job</p> <p>24 responsibilities that you had at Johnson and Johnson</p> <p>25 through your employment, and I may stop you along</p>	<p>1 Q Around 1986 or so you changed jobs?</p> <p>2 A Changed departments. Still had some of</p> <p>3 the same responsibility.</p> <p>4 Q What department did you move to then?</p> <p>5 A I moved to the marketing department then.</p> <p>6 Q What was your job title?</p> <p>7 A It was still medical services. I was</p> <p>8 medical services manager at the time.</p> <p>9 Q What were your jobs responsibilities as</p> <p>10 medical services manager?</p> <p>11 A The same, to respond to consumers for</p> <p>12 medical and safety issues, and at that time I had a</p> <p>13 team of nurses working with me.</p> <p>14 Q The first job you had, what products were</p> <p>15 you responsible for or did you have interaction</p> <p>16 with?</p> <p>17 A The first job was all for Johnson's Baby</p> <p>18 Products.</p> <p>19 Q What products did that include?</p> <p>20 A A lot of products.</p> <p>21 Q The primary ones.</p> <p>22 A Johnson's Baby Shampoo, Johnson's Baby</p> <p>23 Lotion, Johnson's Baby Wash and Johnson's Baby</p> <p>24 Powder, Johnson's Baby Powder Corn Starch, Johnson's</p> <p>25 Baby Oil.</p>
Page 10	Page 12
<p>1 the way?</p> <p>2 A My main responsibilities were</p> <p>3 communicating with consumers about our products.</p> <p>4 Q What was the first job title you had at</p> <p>5 Johnson and Johnson, if you recall?</p> <p>6 A Medical services assistant.</p> <p>7 Q What specifically was your job</p> <p>8 responsibility as medical services assistant?</p> <p>9 A To respond to consumer contacts about any</p> <p>10 medical or safety issues.</p> <p>11 Q How long did you have that job?</p> <p>12 A That would be -- it is hard to remember a</p> <p>13 long time ago. Approximately six or seven years.</p> <p>14 Q Who did you report to when you worked</p> <p>15 there?</p> <p>16 A The person I reported to, I can't think of</p> <p>17 last name. Her first name was Fran.</p> <p>18 Q Was that for Johnson and Johnson itself or</p> <p>19 some subsidiary?</p> <p>20 A That was for Johnson and Johnson Baby</p> <p>21 Products.</p> <p>22 Q Where was that? Where did you work out</p> <p>23 of? What location?</p> <p>24 A At that time the initial part was in</p> <p>25 Raritan, New Jersey.</p>	<p>1 Q And the second job you had when you</p> <p>2 changed departments in 1986, what products were you</p> <p>3 involved with?</p> <p>4 A All of the same products. About that</p> <p>5 time, or a little bit later, we became consumer</p> <p>6 products, so I was responsible for our world care</p> <p>7 products and our oral products.</p> <p>8 Q You took this job in approximately 1986,</p> <p>9 and what part of Johnson and Johnson were you</p> <p>10 working for?</p> <p>11 A At that time, 1986, I was in the marketing</p> <p>12 department.</p> <p>13 Q What division?</p> <p>14 A That was Johnson's, I think, Consumer</p> <p>15 Products at that time.</p> <p>16 Q Where was that located?</p> <p>17 A That was located in Skillman, New Jersey.</p> <p>18 Q Were you responsible in part for Johnson's</p> <p>19 Baby Powder during that period of time?</p> <p>20 A Yes, I was.</p> <p>21 Q What specifically was your role as it</p> <p>22 related to Johnson's Baby Powder? Let me ask you</p> <p>23 this question first, how long did you keep that job</p> <p>24 you took on in 1986 in Skillman for Consumer</p> <p>25 Products?</p>



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<p>1 A Pretty much until mid 2000s.</p> <p>2 Q And who were your supervisors?</p> <p>3 A A lot of different ones. Tom Demusio was</p> <p>4 one, Richard Chase was another. That's all I</p> <p>5 remember right now.</p> <p>6 Q During that periods of time did you have</p> <p>7 responsibility in the capacity you were working for</p> <p>8 Johnson's Baby Powder?</p> <p>9 A Yes, I did.</p> <p>10 Q What geographic locations were you</p> <p>11 responsible for? Was it the U.S., beyond or what,</p> <p>12 for Johnson's Baby Powder?</p> <p>13 A At that time?</p> <p>14 Q Yes, Ma'am.</p> <p>15 A At that time it was U.S.</p> <p>16 Q During that period of time from 1986 to</p> <p>17 2001?</p> <p>18 A Approximately.</p> <p>19 Q Did you have interaction with other</p> <p>20 departments within Johnson and Johnson as it related</p> <p>21 to Johnson's Baby Powder?</p> <p>22 A Yes, definitely.</p> <p>23 Q What departments?</p> <p>24 A I interacted with many different</p> <p>25 departments, but it would have been Quality</p>	<p>1 department at Johnson and Johnson?</p> <p>2 A Yes.</p> <p>3 Q What were your job responsibilities?</p> <p>4 A The same, to respond to consumers for</p> <p>5 medical and safety issues.</p> <p>6 Q Why were you moved from one department to</p> <p>7 the other?</p> <p>8 A I can't really say. It was organizational</p> <p>9 changes.</p> <p>10 Q And what division of Johnson and Johnson</p> <p>11 did you work for when you worked in R and D?</p> <p>12 A At that time it would have been Consumer</p> <p>13 Products.</p> <p>14 Q What specifically was your job title and</p> <p>15 responsibility?</p> <p>16 A My job title would have been still medical</p> <p>17 services manager, and my responsibilities would have</p> <p>18 been to respond to consumers for medical and safety</p> <p>19 issues.</p> <p>20 Q Other than responding to consumers, did</p> <p>21 you ever respond to physicians?</p> <p>22 A Yes, from time to time.</p> <p>23 Q What about the people in the U.S.</p> <p>24 Government, did you ever respond to people in the</p> <p>25 U.S. Government?</p>
Page 14	Page 16
<p>1 Assurance Department, Research and Development,</p> <p>2 Regulatory, Marketing, Packaging, just about every</p> <p>3 department in the company.</p> <p>4 Q What specifically was your department</p> <p>5 called?</p> <p>6 A At that time my department was called</p> <p>7 Medical Services, I believe.</p> <p>8 Q The function of Medical Services</p> <p>9 Department was what?</p> <p>10 A To respond to consumers for medical and</p> <p>11 safety issues.</p> <p>12 Q Now, in 2001, did your job change?</p> <p>13 A I believe 2000, maybe a little bit later</p> <p>14 than that. It is hard to remember. It is a long</p> <p>15 time.</p> <p>16 Q Your best estimate?</p> <p>17 A Yes, but I think it was the latter part.</p> <p>18 Maybe 2005.</p> <p>19 Q So in approximately 2005 your job changed?</p> <p>20 A Part of my responsibilities changed, yes.</p> <p>21 Q Did you work for a different department at</p> <p>22 that point in time?</p> <p>23 A I was then working for the Research and</p> <p>24 Development, Scientific and Medical Affairs.</p> <p>25 Q You actually went to work for the R and D</p>	<p>1 A No, that was not my role.</p> <p>2 Q And you held that position in R&amp;D from</p> <p>3 2005 or 6 until when?</p> <p>4 A Until I left in 2012.</p> <p>5 Q Why did you leave in 2012?</p> <p>6 A The company was downsizing.</p> <p>7 Q At the time you left in 2012, what was</p> <p>8 your annual salary?</p> <p>9 A I don't remember.</p> <p>10 Q Did you leave with a pension?</p> <p>11 A Yes. I eventually retired. I left in</p> <p>12 April when I officially retired, I guess, September</p> <p>13 or October.</p> <p>14 Q After 2012, did you do any other work for</p> <p>15 Johnson and Johnson as an outside contractor?</p> <p>16 A Yes, I did.</p> <p>17 Q What did you do?</p> <p>18 A I worked on product claims, substantiation</p> <p>19 of product claims.</p> <p>20 Q What does that mean?</p> <p>21 A Ensuring that any claims that were made on</p> <p>22 our product had the proper substantiation, whether</p> <p>23 it be testing, research, et cetera.</p> <p>24 Q Did you work for a company, for yourself</p> <p>25 at that point in time when you became a contractor?</p>

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<p>1 A I worked for a company.</p> <p>2 Q What company?</p> <p>3 A It was called Med Global.</p> <p>4 Q How long did you have that job?</p> <p>5 A About a year and a half, maybe two years.</p> <p>6 Q Then what did you do?</p> <p>7 A Well, at that time I was working for Dress</p> <p>8 for Success also, and I continued to do that.</p> <p>9 Q When is the last time you worked for</p> <p>10 Johnson and Johnson, you did work for Johnson and</p> <p>11 Johnson?</p> <p>12 A The last time I worked directly for</p> <p>13 Johnson and Johnson would have been 2012.</p> <p>14 Q When you were working as a private</p> <p>15 contractor for Johnson and Johnson after you</p> <p>16 retired, who at Johnson and Johnson did you interact</p> <p>17 with primarily?</p> <p>18 A The Research Department.</p> <p>19 Q Who specifically?</p> <p>20 A Specifically Nina Turney.</p> <p>21 Q Let me back up for one second. When you</p> <p>22 worked in R and D, who did you report to?</p> <p>23 A When I worked as a consultant?</p> <p>24 Q No, when you worked for Johnson and</p> <p>25 Johnson in the R and D, who did you report to?</p>	<p>1 by the way?</p> <p>2 A All consumer products.</p> <p>3 Q All consumer products?</p> <p>4 A Yes.</p> <p>5 Q Would that include Johnson's Baby Powder?</p> <p>6 A Yes.</p> <p>7 Q Would it include Johnson and Johnson</p> <p>8 Shower to Shower?</p> <p>9 A Yes.</p> <p>10 Q When you had to make sure that the claims</p> <p>11 were -- you were able to back up what you were</p> <p>12 saying basically? Is that what you are saying?</p> <p>13 MS. O'CONNOR: Objection to the form.</p> <p>14 You can answer.</p> <p>15 Q Scientifically?</p> <p>16 MS. O'CONNOR: Same objection.</p> <p>17 A Yes. My role was to ensure that there was</p> <p>18 substantiation, or backup, as you called it, on</p> <p>19 file -- for whatever claims were made on the</p> <p>20 products.</p> <p>21 Q For example, if a claim was being made</p> <p>22 that Johnson and Johnson's Baby Powder never killed</p> <p>23 a child, you would have substantiation for that?</p> <p>24 MS. O'CONNOR: Objection to the form.</p> <p>25 You can answer.</p>
Page 18	Page 20
<p>1 MS. O'CONNOR: Objection to the form.</p> <p>2 You can answer.</p> <p>3 A I reported to director -- one of the</p> <p>4 directors in R and D.</p> <p>5 Q Who was that?</p> <p>6 A Ellen Kurtz.</p> <p>7 Q When you worked as a private contractor</p> <p>8 after retiring, who was the person that you reported</p> <p>9 to?</p> <p>10 A Nina Turney</p> <p>11 Q You say your job was to substantiate the</p> <p>12 claims concerning product safety? I'm not sure I</p> <p>13 understood what you did as a private contractor.</p> <p>14 Could you give me some more detail about what you</p> <p>15 did day-to-day?</p> <p>16 MS. O'CONNOR: Objection to the form.</p> <p>17 Mischaracterizes her testimony.</p> <p>18 MR. PLACITELLA: I'm not trying to.</p> <p>19 MS. O'CONNOR: Understood.</p> <p>20 A My job was --</p> <p>21 Q I'll let you know when I'm doing that.</p> <p>22 A My job was to ensure there was</p> <p>23 substantiation for any claims that were made on the</p> <p>24 products.</p> <p>25 Q So, for example, if I -- What products,</p>	<p>1 A Well, --</p> <p>2 Q No child ever lost his life as a result of</p> <p>3 using Johnson and Johnson Baby Powder, you would</p> <p>4 make sure that was an accurate statement?</p> <p>5 MS. O'CONNOR: Objection to the form.</p> <p>6 A We are talking about claims on a product</p> <p>7 and what the product does. That's what the</p> <p>8 substantiation was for.</p> <p>9 Q Claims on a product. If a claim was made</p> <p>10 by Johnson and Johnson that no child was ever -- let</p> <p>11 me go this way.</p> <p>12 If a claim was made that there was X</p> <p>13 ingredient in Johnson and Johnson's Baby Powder, you</p> <p>14 would make sure that was the case?</p> <p>15 A Yes.</p> <p>16 MS. O'CONNOR: Objection to the form.</p> <p>17 Q What records would you have access to to</p> <p>18 make sure that was, in fact, the case?</p> <p>19 A There were many different records. I</p> <p>20 would work, again, with a team. Mainly the team in</p> <p>21 research and development for these kinds of things.</p> <p>22 Q Did you ever have a similar responsibility</p> <p>23 when you actually worked directly for Johnson and</p> <p>24 Johnson?</p> <p>25 A Not for product claims, no.</p>

<p style="text-align: right;">Page 21</p> <p>1 Q If a claim was made that testing was done 2 of a specific Johnson and Johnson product, you would 3 be provided access to all the testing and look at it 4 yourself? 5 MS. O'CONNOR: Objection, vague and 6 ambiguous. Mischaracterizes the testimony. You can 7 answer. 8 A No, I would rely on the team members for 9 that. 10 Q So you would not personally review the 11 testing documents, you would speak to someone and 12 they would provide you with information. Is that 13 fair? 14 A I would speak to the appropriate members 15 of the team, yes. 16 Q With no disrespect, how was it that you 17 were qualified to do that, to substantiate claims 18 related to, for example, product safety? 19 MS. O'CONNOR: Objection to the form 20 of the question. Vague and ambiguous, 21 Mischaracterizes the testimony. You can answer. 22 A Again, when I was doing substantiating, or 23 ensuring there was substantiation for the claims, 24 they were product claims, not safety claims. They 25 were product claims.</p>	<p style="text-align: right;">Page 23</p> <p>1 provided. We know every product goes through the 2 same process. 3 So we would review any testing. I 4 wouldn't review it, I would rely on my team members 5 to review it, and that would substantiate whatever 6 we were saying on the label. 7 Q This is what I'm trying to understand. 8 There are people at Johnson and Johnson that -- they 9 have the information about the claims that are being 10 made concerning the product, correct? 11 A Correct. 12 Q They are people in R and D primarily? 13 A That's part of the team, yes. 14 Q Who else? 15 A Regulatory. 16 Q Okay. 17 A It may be pretty much regulatory and the 18 development people who are part of research and 19 development. 20 Q So you have people in regulatory, you have 21 people who have the actual knowledge, correct? 22 Those are the people in R and D? 23 A Correct. 24 Q They have actual, either personal 25 knowledge or access to the testing that verifies the</p>
<p style="text-align: right;">Page 22</p> <p>1 Q What is the difference? 2 A One has to do, by the example you gave, 3 ingredients in a product, what the product does, 4 things like that. 5 I did not substantiate them, I relied 6 on people within the team and mainly the research 7 and development team. 8 Q Do you know why Johnson and Johnson 9 subcontracted that function out to you versus doing 10 it themselves? 11 MS. O'CONNOR: Objection, ambiguous, 12 calls for speculation. 13 A No. 14 Q Did you have responsibility for 15 substantiating product safety claims? 16 A Again, I didn't substantiate them, I 17 insured that there was substantiation by relying on 18 the members of the team. 19 Q So, for example, if a claim was made by 20 Johnson and Johnson that baby powder was safe for 21 babies, what would you go through? What process 22 would you go through in order to fulfill your 23 function? 24 A There's a process that every product goes 25 through to ensure the safety. That is what would be</p>	<p style="text-align: right;">Page 24</p> <p>1 claim, correct? 2 A They would have some of it, yes. We would 3 have, our quality assurance department might have 4 some. Depending on what it is, there's a lot of 5 people involved. 6 Q What I'm trying to understand is if all 7 that knowledge is within Johnson and Johnson, with 8 all due respect, why do they need you? 9 A To ensure that we had all that knowledge 10 really in one place. 11 Q But there's nobody in Johnson and Johnson 12 that knew it was all in one place? 13 A It is not a question of knowing it is in 14 one place, it was documented that we have it and 15 putting it in one place. What do you mean by one 16 place? 17 Q If a claim is made about, for example, 18 Johnson's Baby Powder, how did you document it as 19 part of your function in that job capacity as an 20 outside contractor? 21 A Well, after working with the various team 22 members we had a computer system where we would 23 document the information, where it could be found. 24 We didn't have it all in there. It was too long 25 to put in that particular system.</p>

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<p>1 Q When you say we had a computer system, was</p> <p>2 that Johnson and Johnson's computer system or your</p> <p>3 company's computer system?</p> <p>4 A It was Johnson and Johnson's system.</p> <p>5 Q So you, as an outside contractor, you had</p> <p>6 direct access to Johnson and Johnson's computer</p> <p>7 system?</p> <p>8 MS. O'CONNOR: Objection to the form</p> <p>9 of the question.</p> <p>10 A At that time, yes.</p> <p>11 Q What was the name of that computer system</p> <p>12 or that computer program?</p> <p>13 A I don't remember.</p> <p>14 Q Who was the person in charge of it? Was</p> <p>15 it Tom Cox? Did you know Tom Cox?</p> <p>16 A No.</p> <p>17 Q Who was the person in charge of</p> <p>18 administering that computer program?</p> <p>19 A I don't remember.</p> <p>20 Q Am I correct that you, just so we go</p> <p>21 through this, you have no expertise in interpreting</p> <p>22 epidemiology?</p> <p>23 A That's correct.</p> <p>24 Q You have no expertise in interpreting</p> <p>25 toxicology?</p>	<p>1 Q In preparation for today's deposition, did</p> <p>2 you review any documents?</p> <p>3 A No.</p> <p>4 Q Did you review any sworn testimony by any</p> <p>5 witness?</p> <p>6 A No.</p> <p>7 Q Did you speak to anybody, other than</p> <p>8 counsel?</p> <p>9 A No.</p> <p>10 Q How many times did you meet with counsel?</p> <p>11 A Twice.</p> <p>12 Q For how long and when?</p> <p>13 A One day last week and Monday of this week.</p> <p>14 Q For how long last week and how long on</p> <p>15 Monday?</p> <p>16 A About six hours each day.</p> <p>17 Q In those meetings, you never looked at any</p> <p>18 documents that would help you refresh your memory</p> <p>19 concerning events that happened while you were</p> <p>20 there?</p> <p>21 A No, I did not.</p> <p>22 Q Did you ever testify for Johnson and</p> <p>23 Johnson in any trials?</p> <p>24 A No, I did not.</p> <p>25 Q When you met with counsel for Johnson and</p>
Page 26	Page 28
<p>1 A That is correct.</p> <p>2 Q You have no expertise in testing methods</p> <p>3 for contaminants in Johnson's Baby Powder?</p> <p>4 A That's correct.</p> <p>5 Q You have no expertise in how to construct</p> <p>6 a proper warning in order to reflect the information</p> <p>7 that's known about the product?</p> <p>8 A I'm not an expert, but I'm knowledgeable</p> <p>9 and would take information from all the valid</p> <p>10 resources.</p> <p>11 Q Have you ever had any training or</p> <p>12 education in the subject of what a proper warning</p> <p>13 should look like?</p> <p>14 A No.</p> <p>15 Q Do you know, for example, what the</p> <p>16 difference is in warning theory between a caution</p> <p>17 and a warning and when you would use each?</p> <p>18 A Again, I'm knowledgeable. I'm not an</p> <p>19 expert. That would really fall under regulatory's</p> <p>20 role.</p> <p>21 Q Who at regulatory is the person who was</p> <p>22 specifically knowledgeable about that issue?</p> <p>23 A There were a lot of people in regulatory.</p> <p>24 I don't know who. I could say specifically one of</p> <p>25 the people I worked with was Nadine Harrison.</p>	<p>1 Johnson, were you paid for your time?</p> <p>2 A No, I was not.</p> <p>3 Q Are you being paid for your time today?</p> <p>4 A I received \$2 with my subpoena.</p> <p>5 Q If this goes well, I'll raise it a dollar</p> <p>6 fifty.</p> <p>7 Did you ever have any prior</p> <p>8 involvement on behalf of Johnson and Johnson in</p> <p>9 litigation related to Johnson's Baby Powder?</p> <p>10 A Yes.</p> <p>11 Q What was that involvement?</p> <p>12 A Preparing information or delivering</p> <p>13 information to Johnson and Johnson's legal</p> <p>14 department.</p> <p>15 Q When was that?</p> <p>16 A I couldn't tell you specifically. I don't</p> <p>17 remember.</p> <p>18 Q Was it the '80s, the '90s, 2000s? Do you</p> <p>19 have any clue? How many times did that happen?</p> <p>20 A I'm going to say the '80s, but I really</p> <p>21 don't remember the specific dates.</p> <p>22 Q Was that part of your ongoing role, to</p> <p>23 interact with the lawyers at Johnson and Johnson in</p> <p>24 cases involving Johnson's Baby Powder?</p> <p>25 A Yes, I was a point person.</p>

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<p>1 Q When you say point person, what does that</p> <p>2 mean?</p> <p>3 A There's so many departments and so many</p> <p>4 different people at Johnson and Johnson that really</p> <p>5 I was the person who could help direct whatever</p> <p>6 question or whatever information was needed.</p> <p>7 Q For example, if a specific question was</p> <p>8 posed in a lawsuit, you would be the person that</p> <p>9 gathered the information to answer that question?</p> <p>10 MS. O'CONNOR: Objection to the form.</p> <p>11 A I would again go to the appropriate</p> <p>12 department to supply that answer or direct the</p> <p>13 attorney to that department.</p> <p>14 Q If there was a question in a lawsuit that</p> <p>15 said, or you were directed to secure all the testing</p> <p>16 information that Johnson and Johnson had as to</p> <p>17 whether the Johnson's Baby Powder ever contained</p> <p>18 asbestos, that would be part of your function?</p> <p>19 MS. O'CONNOR: Objection to the form.</p> <p>20 You can answer.</p> <p>21 A Again, I would direct our attorneys to the</p> <p>22 appropriate department for that.</p> <p>23 Q You would, for example, then say to the</p> <p>24 lawyers, you should go talk to Mr. Jones in R and D</p> <p>25 and Mrs. McGillicutty in quality assurance, that</p>	<p>1 Q Did that ever happen?</p> <p>2 MS. O'CONNOR: Objection to the</p> <p>3 mischaracterization.</p> <p>4 A That may have happened, yes.</p> <p>5 Q How many cases over the years that you</p> <p>6 worked for Johnson and Johnson were you involved in</p> <p>7 that related to Johnson's Baby Powder?</p> <p>8 A I don't remember.</p> <p>9 Q Was it more than one?</p> <p>10 A Yes. I would say more than one.</p> <p>11 Q Did you ever work on any cases related to</p> <p>12 the Shower to Shower product?</p> <p>13 A Not that I remember, no.</p> <p>14 Q In the cases you worked on related to</p> <p>15 Johnson's Baby Powder, do you know what injuries</p> <p>16 were being alleged by the people suing Johnson and</p> <p>17 Johnson?</p> <p>18 A Yes. There have been allegations of lung</p> <p>19 disease.</p> <p>20 Q When you say lung disease, what do you</p> <p>21 mean by that?</p> <p>22 A Allegations of lung cancer or any</p> <p>23 breathing diseases.</p> <p>24 Q Did that include claims for talcosis?</p> <p>25 A It may have. I don't remember</p>
Page 30	Page 32
<p>1 kind of thing?</p> <p>2 MS. O'CONNOR: Objection to the form.</p> <p>3 You can answer the question.</p> <p>4 A Yes.</p> <p>5 Q Did you have actual knowledge concerning</p> <p>6 the records that were available in the various</p> <p>7 departments that were used to support or answer</p> <p>8 questions for litigation?</p> <p>9 MS. O'CONNOR: Objection, vague,</p> <p>10 ambiguous. You can answer.</p> <p>11 A I knew of them.</p> <p>12 Q Did you actually ever review the records</p> <p>13 yourself to determine whether they were accurate and</p> <p>14 complete in assisting in a litigation support role?</p> <p>15 MS. O'CONNOR: Objection. Vague and</p> <p>16 ambiguous. You can answer.</p> <p>17 A I did not review them.</p> <p>18 Q Did you actually ever take physical</p> <p>19 control of the records and transfer them to legal?</p> <p>20 A I don't remember, no.</p> <p>21 Q So you would -- your function would be to</p> <p>22 tell legal you need to speak to Dr. Ashton about</p> <p>23 this subject, and he will have the records, for</p> <p>24 example?</p> <p>25 MS. O'CONNOR: Objection.</p>	<p>1 specifically.</p> <p>2 Q Do you know what talcosis is?</p> <p>3 A Yes.</p> <p>4 Q What is it?</p> <p>5 A It is an inflammation.</p> <p>6 Q Related to the inhalation of what?</p> <p>7 A Of talc.</p> <p>8 Q Did you ever defend cases or help defend</p> <p>9 cases involving ovarian cancer?</p> <p>10 MS. O'CONNOR: Objection to the form.</p> <p>11 You can answer.</p> <p>12 A I may have, again, in my role as point</p> <p>13 person, may have provided or directed information.</p> <p>14 Q What about mesothelioma?</p> <p>15 A Specifically, no.</p> <p>16 Q Now, in order to perform the jobs you had</p> <p>17 properly, did you need to understand how the various</p> <p>18 products you were working on were applied to the</p> <p>19 human body?</p> <p>20 A Yes.</p> <p>21 Q Did you need to understand how the</p> <p>22 products were being advertised?</p> <p>23 A I did not need to understand, but that was</p> <p>24 part of it.</p> <p>25 Q It was part of your job to understand</p>



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<p>1 or --</p> <p>2 A To be aware.</p> <p>3 Q To be aware and knowledgeable?</p> <p>4 A Yes, to be aware.</p> <p>5 Q I want to focus a little bit now</p> <p>6 specifically on Johnson's Baby Powder, okay?</p> <p>7 Am I correct that Johnson and Johnson</p> <p>8 had recommended the liberal application of Johnson's</p> <p>9 Baby Powder to babies for many decades?</p> <p>10 MS. O'CONNOR: Objection to the form</p> <p>11 of the question. Vague and ambiguous. You can</p> <p>12 answer it.</p> <p>13 A Johnson's Baby Powder has been in existence</p> <p>14 for many decades, yes. I'm not sure what you mean</p> <p>15 by liberal application.</p> <p>16 Q Did you actually ever see Johnson and</p> <p>17 Johnson's advertisements historically where they</p> <p>18 recommended or indicated that the baby powder should</p> <p>19 be applied liberally?</p> <p>20 MS. O'CONNOR: Same objection. You</p> <p>21 can answer.</p> <p>22 A No, I don't remember seeing anything that</p> <p>23 said that.</p> <p>24 Q I'm going to hand you what's been marked</p> <p>25 388. I'll put it up on the screen.</p>	<p>1 389. All the documents, unless I tell you otherwise</p> <p>2 today, are documents that were given to us by</p> <p>3 Johnson and Johnson.</p> <p>4 This a document dated October 13,</p> <p>5 1971 from a Mr. Kulkarni. Do you have any idea who</p> <p>6 he was?</p> <p>7 A No, I do not.</p> <p>8 Q Do you recognize any of the people who are</p> <p>9 cc'd on this document?</p> <p>10 A I recognize two names.</p> <p>11 Q Which names do you recognize?</p> <p>12 A The second one, Jim Dettre and the second</p> <p>13 to the last, Dr. Sawchuck.</p> <p>14 Q What was your understanding of Mr. Dettre's</p> <p>15 job?</p> <p>16 A I don't know because, as you said, this</p> <p>17 was dated 1971.</p> <p>18 Q What did he do when you knew him? What</p> <p>19 was his job?</p> <p>20 A I believe he worked with professionals at</p> <p>21 the time when I first knew him, but that was a long</p> <p>22 time ago. I don't know exactly what his title was.</p> <p>23 Q What about Dr. Sawchuk, what was his job,</p> <p>24 if you know?</p> <p>25 A Again I don't know what his job was in</p>
Page 34	Page 36
<p>1 This is an advertisements for</p> <p>2 Johnson's Baby Powder. Do you see that?</p> <p>3 A Yes. I see that.</p> <p>4 Q In the upper left hand corner where it</p> <p>5 talks about liberal application of Johnson's Baby</p> <p>6 Powder will do wonders. Do you see that?</p> <p>7 A Yes, I see that.</p> <p>8 Q So, in this advertisement, Johnson and</p> <p>9 Johnson is actually promoting the liberal</p> <p>10 application of Johnson's Baby Powder, correct?</p> <p>11 MS. O'CONNOR: Objection to the form.</p> <p>12 You can answer.</p> <p>13 A What it says here, liberal application</p> <p>14 will do wonders.</p> <p>15 Q This particular advertisement goes all the</p> <p>16 way back to the '40s, correct?</p> <p>17 A It looks like it says 1942.</p> <p>18 Q And there was a time in your career where</p> <p>19 you actually went back and looked at historical</p> <p>20 advertisements so you could provide information</p> <p>21 about how the baby powder product was actually being</p> <p>22 used historically, correct?</p> <p>23 A No. I didn't go back and look at</p> <p>24 historical advertisements.</p> <p>25 Q I'll show you what's been marked exhibit</p>	<p>1 1971, so I can't say.</p> <p>2 Q What job did he have when you knew him?</p> <p>3 A I don't know what his title was.</p> <p>4 Q Do you see in the second paragraph, it</p> <p>5 talks about applying Johnson Baby powder liberally</p> <p>6 to the diaper for extra protection?</p> <p>7 A I see that, yes.</p> <p>8 Q Is that consistent with what your</p> <p>9 understanding was as to how the products was being</p> <p>10 applied?</p> <p>11 MS. O'CONNOR: Objection, vague,</p> <p>12 ambiguous.</p> <p>13 A I don't know. Again, this is 1971, so I</p> <p>14 don't know.</p> <p>15 Q That's a period of time now of thirty</p> <p>16 years. You had an advertisement from 1942 that</p> <p>17 talks about liberal application, and now you have an</p> <p>18 internal document that talks about liberal</p> <p>19 application in 1972, correct? 1971, correct?</p> <p>20 MS. O'CONNOR: Objection. You can</p> <p>21 answer.</p> <p>22 A Repeat the question.</p> <p>23 Q You have seen here is an advertisement</p> <p>24 from 1952 that talked about liberal application and</p> <p>25 an internal Johnson and Johnson document still,</p>



<p style="text-align: right;">Page 37</p> <p>1 thirty years later, also talking about liberal 2 application, correct? 3 MS. O'CONNOR: Objection. 4 Mischaracterization of the document. You can 5 answer. 6 A Again, I can't say anything about these, 7 but it appears the one from 1971 is talking about 8 applying the powder on the diaper. 9 Q Liberally. 10 A They use the word liberal, yes. 11 Q Now, by the way, if you know, who was Maria 12 Pilar Garcia Villacorte? 13 A I don't know. 14 Q Do you know who Christine Sanchez was? 15 A No. 16 Q I'm going to show you exhibits 408. This 17 is from 2001. You were working at Johnson and 18 Johnson in 2001, correct? 19 A Yes. 20 Q Have you ever seen this particular Power 21 Point before? Take a quick look at it. 22 A No. 23 MS. O'CONNOR: There are dates on 24 this document that I don't think were on the 25 original. I think it is a print date.</p>	<p style="text-align: right;">Page 39</p> <p>1 Q As I read in some documents that you 2 actually had some personal experience with this with 3 your own kids, right? 4 A Yes. I commonly used Johnson's Baby 5 Powder on both my children. 6 Q Is this consistent with what you did with 7 your kids? 8 A Yes, it is. 9 Q When you used the baby powder on your 10 kids, and you were finished using it, where would 11 you typically put it down? Near the head or near 12 the feet? 13 A Near the feet. 14 Q Near the feet? 15 A Yes. 16 Q Did you have any concerns that the child 17 might kick it over? 18 A I may have thought of that. I don't know. 19 I usually closed it after using it. 20 Q In a child under the age of six months, 21 what is the furthest point from the mouth that the 22 baby powder would be used on a child in your 23 experience? 24 A It could be used on the legs, behind the 25 knees, on the feet.</p>
<p style="text-align: right;">Page 38</p> <p>1 MR. PLACITELLA: That's us. Go 2 ahead. 3 A This does not seem familiar to me, no. 4 Q I put up on the screen a page from the 5 Power Point that states, "Areas of the body where 6 powder is commonly used on adults." Do you see 7 there? 8 A That's what is says, yes. 9 Q Is this consistent with your understanding 10 about where Johnson's Baby Powder was commonly used 11 on adults? 12 MS. O'CONNOR: Objection to the 13 mischaracterization of the document. 14 A Yes, I would agree with that. 15 Q If you go to the next page, I also put up 16 on the screen areas of the body where baby powder is 17 commonly used on a baby. Do you see that? 18 A Yes, I do. 19 Q It shows the neck, the underarms, the 20 folds in the skin and the diaper area, correct? 21 A Yes. 22 Q Is that consistent with your understanding 23 about where the product was commonly used on 24 babies? 25 A Yes.</p>	<p style="text-align: right;">Page 40</p> <p>1 Q Is that usually, what, within a foot of 2 the mouth? 3 A No. 4 Q What is the farthest point from the mouth 5 in your estimation on a child that the baby powder 6 would be applied in terms of distance? 7 A Depends on the length of the baby. As I 8 said, it would be on their foot, behind their knees. 9 Q What is the closest point to the mouth and 10 nose? 11 A Under the neck folds. 12 Q I wrote down a question on this piece of 13 paper, and the question is, and this is my 14 handwriting by the way. Can you see it up on your 15 screen? 16 A Yes. 17 Q "Did the talc that was used in any J and J 18 Baby Powder product ever contain any amounts of 19 asbestos?" Do you see that? 20 A I see that. 21 Q That was a question that, or questions 22 like that that you were called upon to answer as 23 part of your job at Johnson and Johnson, correct? 24 A Yes. 25 Q And that question was raised over and over</p>

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<p>1 again by people outside of Johnson and Johnson from 2 almost the time you started working there, correct? 3 MS. O'CONNOR: Objection to form 4 of the question. You can answer. 5 A I know it was a question that we received, 6 yes. 7 Q And part of your job was to answer that 8 question repeatedly on an ongoing basis, correct? 9 MS. O'CONNOR: Objection to the form. 10 Vague and ambiguous. 11 A We provided that information when the 12 consumers asked it, yes. 13 Q Now, even when you were dealing with your 14 own child in the hospital, that issue was raised to 15 you specifically by health care providers in the 16 hospital lot, correct? 17 MS. O'CONNOR: Objection to the form 18 of the question. Vagues and ambiguous. You can 19 answer. 20 A Yes. One nurse did say that. 21 Q What do you recall about that exchange? 22 A Going back a few years to when my daughter 23 was born. The nurse in the post partum, after birth 24 area, said, "Oh, don't use baby powder." And I 25 asked her why, and she said, "It is dangerous,"</p>	<p>1 regulatory, our marketing, different people in 2 research and probably quality assurance, but I don't 3 know for sure. 4 Q In this particular document, which was 5 1986, I'll blow up the paragraph, you said, and this 6 is about the conversation you had with the nurse at 7 the hospital, correct? 8 A Yes. 9 Q And the nurse raised the issue about 10 whether baby powder could cause cancer or lung 11 disease? 12 A That's what she was questioning. 13 Q You told her what your position was at 14 Johnson and Johnson, according to this, right? 15 A That's what it says, yes. 16 Q And you said that you had studies 17 disputing the statement that talc causes lung 18 disease, correct? 19 A I said we have studies. 20 Q What studies were you referring to? Do 21 you know? 22 A I don't know specifically. 23 Q It says, and it also talks about ovarian 24 cancer. Was the subject of ovarian cancer discussed 25 with the nurse back in 1986?</p>
Page 42	Page 44
<p>1 but she didn't know why. 2 Q Your response was what? 3 A That it was not dangerous. 4 Q Now, did you actually communicate that 5 exchange within Johnson and Johnson? 6 A Yes, I believe I did. 7 Q I'm going to show you a memo January 2, 8 1986, and ask you to take a look at it. And while 9 you are doing that, I'm going to go over this 10 question that in we went over in black pen so 11 everybody can read it. 12 Exhibit 325 is a June January 2, 1986 13 memo that you wrote and the re is Johnson's Baby 14 Powder, correct? 15 A That is correct. 16 Q Do you see that? It says to distribution. 17 What does that mean? 18 A I would -- I don't remember, but that 19 would be a group of people who routinely copied on 20 or sent information about specific issues. 21 Q Distribution, did that go beyond your 22 department? 23 A Yes. 24 Q What other departments would get it? 25 A I don't know for sure, but I would say our</p>	<p>1 A It is looks like that was brought up. I 2 don't remember what was specifically -- other than 3 what's here. 4 Q Was the subject of asbestos also brought 5 up in the context of your conversation with the 6 nurse? 7 A I don't remember the conversation and I 8 don't see anything about asbestos here with that 9 nurse. 10 Q So if I go to the next page, you document 11 that the nurse told you that somebody from Johnson 12 and Johnson told her specifically that the baby 13 powder was being taken off the market because it 14 contained asbestos, right? 15 A That's what it says here, that the nurse 16 said, the second nurse. 17 Q You said you immediately responded that 18 the product did not contain asbestos, correct? 19 A That's correct. 20 Q So you discussed with the nurse in 1986 21 the subject of asbestos, cancer, ovarian cancer and 22 lung disease, correct? 23 A Two different nurses I had a conversation 24 with, yes. 25 Q So there were two different nurses at this</p>

<p style="text-align: right;">Page 45</p> <p>1 hospital who both raised the issue about whether 2 Johnson's Baby Powder was capable of causing lung 3 disease and cancer, correct? 4 A The first nurse did question, according to 5 the notes here, cancer and lung disease. And the 6 the second nurse, yes. 7 Q When you were making statements that the 8 product doesn't contain asbestos, had you actually 9 seen testing results showing that the product 10 doesn't contain asbestos, or were you relying upon 11 someone else for that information? 12 A I would rely on members of my team who 13 were experts in that field. 14 Q And who specifically at that time? 15 A At that time I don't remember too many 16 names. It may have Don Hicks in quality assurance. 17 I don't remember a lot of names 30 years ago. 18 Q That is fair enough. 19 I'm going to show you Exhibit 358 and 20 ask you to take a look at that. 358 is another memo 21 that was authored by you on the same date, correct? 22 A Yes. 23 Q It was about Johnson's Baby Powder and you 24 sent it to the distribution list, correct? 25 A That's what it says, yes.</p>	<p style="text-align: right;">Page 47</p> <p>1 company. 2 Q "Johnson's Baby Powder does not contain 3 asbestos. I explained we own our talc mines and 4 have complete control over the product." Do you see 5 that? 6 A Yes. 7 Q What was the source of that information 8 that you conveyed to this person? 9 A What do you mean, the source? 10 Q You say we have complete control of our 11 talc mines. Control over the product. What is the 12 source of that information? 13 A That would have been information from 14 manufacturing and quality assurance. 15 Q Who specifically, if you remember? 16 A As I said earlier, I don't remember. One 17 one name I remember Don Hicks. 18 Q Was it also part of your function, in 19 addition to responding to consumers, to respond to 20 the media as it related to safety of the products 21 you were involved with? 22 A Yes, it was. 23 Q I'm going to show you Exhibit 410. I'll 24 tell you this is not from Johnson and Johnson's 25 files, but you would be happy to know that Nancy</p>
<p style="text-align: right;">Page 46</p> <p>1 Q On the re it says redacted personal 2 information. What kind of personal information 3 would you put on a re about Johnson's Baby Powder 4 that no one is allowed to see? 5 MS. O'CONNOR: Objection to the form 6 of the question. Argumentative and ambiguous. You 7 can answer. 8 A I didn't redact it, so I don't know what 9 that is. 10 Q You state that on December 26, 1985, you 11 spoke with, and then it is whited out, concerning. 12 MS. O'CONNOR. Redacted. 13 Q Redacted, concerning the safety of 14 Johnson's Baby Powder. Then it is redacted and it 15 says, "Claims he heard a new report on WINS Radio 16 stating that Johnson's Baby Powder contains 17 particles of asbestos and children with weak trachea 18 could die from its use." Do you see that? 19 A I see that, yes. 20 Q Do you know who you spoke to? 21 A No. 22 Q It says, "I began my conversation by 23 informing" -- was this somebody inside the company 24 that you are writing about or outside the company? 25 A I'm going to assume it was outside the</p>	<p style="text-align: right;">Page 48</p> <p>1 Musco lives on on the internet. We pulled this off 2 the internet. 3 This is an article entitled: 4 "Asbestos has not been found in talcum powder, firm 5 says," and the date is June 4, 1987. Do you see 6 that? 7 A Yes, I see that. 8 Q Do you recall the circumstances of this 9 article? 10 A No, I do not. 11 Q It states here, "Nancy Musco, a registered 12 nurse and manager of Johnson and Johnson Medical 13 Services, assures us that her company's source of 14 talc since the 1920s, chosen for its purity has been 15 Italy and later Vermont, and the same sources are 16 used today. When the asbestos issue arose in 1970, 17 the company started formally testing for asbestos 18 with the claim that non ever was found." Do you see 19 that? 20 A Yes, I do. 21 Q Do you know what the source of that 22 information was as you relate it in this news story 23 in 1987? 24 A A long time ago, but it would have been 25 manufacturing and quality.</p>

<p style="text-align: right;">Page 49</p> <p>1 Q Is the only person you can recall Mr. 2 Hicks? 3 A Yes. One other gentleman, Sam Jiwrajka. 4 Those are the only names I remember. 5 Q But am I correct that you had no personal 6 knowledge of this testing. You never spoke to 7 anyone who did the testing and never reviewed any of 8 the tests yourself? 9 A No, that was not my role. 10 Q So no, it never happened? 11 A Correct. 12 Q 401 I'm going to give to you, and I'll put 13 it up on the screen. 401 is a document with the 14 handwriting on the top, paper number 3. Do you see 15 that? 16 A Yes. 17 Q According to the production by Johnson and 18 Johnson, this document came from your file. Do you 19 recognize this document? 20 A No, I do not. 21 Q It states on the top, "This information 22 was from CPI." Do you see that? 23 A Yes. 24 Q Do you know what CPI was? 25 A Consumer Products, Inc.</p>	<p style="text-align: right;">Page 51</p> <p>1 Q On the bottom, in the middle it talks 2 about 1976. It says, "Prior to 1976, some powders 3 were found to contain very minute traces of 4 asbestos." Do you see that? 5 A Yes. 6 Q Did you know that? 7 A Well, the point is Johnson's Baby Powder 8 did not. 9 Q And what you were telling people is that 10 no matter what was found in other people's baby 11 powder, none was ever found in Johnson's Baby 12 Powder, correct? 13 A No. What I was telling people is 14 Johnson's Baby Powder does not contain asbestos. 15 Q Never did and never will? 16 A Correct. 17 Q Now, on the bottom, there's a note that 18 says, "Note, if asked questions, you should speak to 19 the positive J and J story. For example, has 20 asbestos ever been found in any baby powders? And 21 the suggested response is I can assure you asbestos 22 has never been found in Johnson's Baby Powder and 23 never will." Correct? 24 A That is correct. 25 Q That is exactly what you told people?</p>
<p style="text-align: right;">Page 50</p> <p>1 Q So when it said the information came from 2 CPI, Consumer Products, Inc., was that a different 3 part of the company or part of the company you 4 worked for? 5 A I don't know what year this was or where 6 this was from. 7 Q I want to ask you about some parts of it 8 and see if it will help. 9 Under synopsis, it says, "Johnson and 10 Johnson Baby Powder does not contain asbestos. 11 Asbestos has never been found in Johnson's Baby 12 Powder and it never will." Do you see that? 13 A Yes, I do. 14 Q Is that consistent with what you were 15 relating to consumers and the media during the time 16 that you worked on Johnson's Baby Powder? 17 A Yes, that's true. Johnson's Baby Powder 18 does not contain asbestos. 19 Q It never did and never will? 20 A That's correct. 21 Q And that was related to you and when you 22 made those statements, you relied upon others to be 23 truthful in all respects in giving you that 24 information, correct? 25 A Yes, I relied on the experts.</p>	<p style="text-align: right;">Page 52</p> <p>1 A Yes. 2 Q And that's similar to the question I wrote 3 down when we started the deposition, correct? 4 A Yes. Johnson's Baby Powder does not 5 contain asbestos. 6 Q Did the talc that was used in any 7 Johnson's Baby Powder product ever contain any 8 amount of asbestos, and the answer always was, never 9 did, never will, correct? 10 A Correct. 11 Q Exhibit 360 is an email with a bunch of 12 emails, a string below it. Do you see that? 13 A Yes. 14 Q Just for purposes of identification, the 15 primary email on top is dated May 25, 2000 and it is 16 from John McKeegan, M C K E E G A N. Do you see 17 that? 18 A Yes. 19 Q Who is John McKeegan? 20 A John was corporate public relations. 21 Q What was his job in corporate public 22 relations? 23 A I can't tell you the exact 24 responsibilities of his job. 25 Q It is to Katherine Murphy. Who is</p>

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<p>1 Katherine Murphy?</p> <p>2 A A marketing person.</p> <p>3 Q So she was in marketing?</p> <p>4 A Yes.</p> <p>5 Q And then to yourself, correct?</p> <p>6 A Yes.</p> <p>7 Q To Jeffrey Lebow, L E B A W.</p> <p>8 A He was corporate also.</p> <p>9 Q When you any corporate, what do you mean</p> <p>10 by that?</p> <p>11 A Public relations.</p> <p>12 Q And then there's a Gary Noble?</p> <p>13 A Yes.</p> <p>14 Q And who is he?</p> <p>15 A I believe he was R and D, research.</p> <p>16 Q The below that are some other people who</p> <p>17 are identified and we will get them while we are</p> <p>18 sitting here. Veronica Rubio, who way she?</p> <p>19 A I don't know.</p> <p>20 Q How about Ray Gregiore?</p> <p>21 A I don't know him.</p> <p>22 Q How about Michael Chudkowski,</p> <p>23 C H U D K O W S K I?</p> <p>24 A A research and development person.</p> <p>25 Q And all of these emails have a parenthesis</p>	<p>1 noted, I was only copied and was copied after the</p> <p>2 fact as an FYI.</p> <p>3 Q Right. You were being told what happened</p> <p>4 leading up to why you got the email, correct?</p> <p>5 MS. O'CONNOR: Objection, vague and</p> <p>6 ambiguous.</p> <p>7 A It was an FYI. They were telling me about</p> <p>8 it, I guess.</p> <p>9 Q The email back involved people who worked</p> <p>10 in your part of the company, correct? CPCUS.</p> <p>11 A They worked in Consumer Products, yes.</p> <p>12 Q Is says, "I'm now working on Johnson's</p> <p>13 Baby Powder and Oil and received the attached email.</p> <p>14 I'm assuming that we had a standard corporate</p> <p>15 response that addresses the concern below." Correct?</p> <p>16 A That's what it says, yes.</p> <p>17 Q And the concern below is whether there was</p> <p>18 asbestos in Johnson's Baby Powder, correct?</p> <p>19 A Not having written, I can only assume</p> <p>20 that's what he was referring to.</p> <p>21 Q And the response back is that the answer</p> <p>22 is simple, there's no asbestos in our product, never</p> <p>23 has been and never will. Correct?</p> <p>24 A That's correct.</p> <p>25 Q Then again it is talks about the mines we</p>
Page 54	Page 56
<p>1 -- Some of them say in parenthesis JJCUS. What did</p> <p>2 that stand for?</p> <p>3 A It the specific Johnson and Johnson</p> <p>4 company. I don't know what all the letters are for.</p> <p>5 I think it is Johnson and Johnson</p> <p>6 Corporate, U.S. That's the designation of which</p> <p>7 Johnson and Johnson division.</p> <p>8 Q For example, for John McKeegan it says</p> <p>9 JJCUS, that's corporate?</p> <p>10 A Correct.</p> <p>11 Q And then for yourself it says CPCUS. What</p> <p>12 does that stand for?</p> <p>13 A Consumer Products Company.</p> <p>14 Q And the email starts on the bottom at that</p> <p>15 time from Mr. Gregiore saying, "Vernonica, Long's</p> <p>16 Drug would like information on Johnson's Baby Powder</p> <p>17 specifically as it applies to any relationship of</p> <p>18 talc to asbestos as reported in local Bay Area</p> <p>19 media," Correct?</p> <p>20 A That's what it says, yes.</p> <p>21 Q So you are involved not only in dealing</p> <p>22 with the media and consumers, but even distributors</p> <p>23 of the Johnson Baby Powder product, correct.</p> <p>24 MS. O'CONNOR: Objection to the form.</p> <p>25 A I have to read the whole thing, but as you</p>	<p>1 used for talc are carefully selected and constantly</p> <p>2 tested to ensure the purity of the raw material,</p> <p>3 correct?</p> <p>4 A That's correct.</p> <p>5 Q In other words, no asbestos in mine</p> <p>6 either, so how could there be in baby powder, right?</p> <p>7 A That's not what it says, no.</p> <p>8 Q Did you have an understanding that there</p> <p>9 was asbestos in the mine where the baby powder came</p> <p>10 from?</p> <p>11 MS. O'CONNOR: Objection to the form.</p> <p>12 MR. GOLDSTEIN: Join.</p> <p>13 MS. O'CONNOR: You can answer.</p> <p>14 A No. What it says here that the mine we</p> <p>15 used are carefully collected and then we test to</p> <p>16 insure the raw material is pure and did not contain</p> <p>17 asbestos.</p> <p>18 Q What was told to you by people inside of</p> <p>19 Johnson and Johnson? Did they tell you that none of</p> <p>20 the mines they used contained asbestos or that it</p> <p>21 did contain asbestos?</p> <p>22 A We did not discuss the mines. The</p> <p>23 important thing was that the cosmetic talc used was</p> <p>24 free of asbestos.</p> <p>25 Q But you, at some point in time, actually</p>



<p style="text-align: right;">Page 57</p> <p>1 related that the mine did not contain asbestos, 2 correct?</p> <p>3 A The talc was tested to ensure that it did 4 not contain asbestos.</p> <p>5 Q So you never made a representation 6 anywhere that the maintenance from which the talc 7 came did not contain asbestos?</p> <p>8 MS. O'CONNOR: Objection. 9 Mischaracterizes the testimony. You can answer.</p> <p>10 A I can't speak to the mine. It is the 11 finished product, the talc used in our product.</p> <p>12 Q By the way, this is not an endurance test, 13 so any time you need to take a break.</p> <p>14 MS. O'CONNOR: We can take a break.</p> <p>15 MR. PLACITELLA: Let me finish this 16 one document.</p> <p>17 Q This document is an email dated 6-1-2000. 18 The subject is talc and asbestos. You are one of 19 the recipients on this email, correct?</p> <p>20 A Yes.</p> <p>21 Q And it is from John McKeegan in Corporate, 22 correct?</p> <p>23 A Correct.</p> <p>24 Q One of the people he sent it to is Owen 25 Rankin. Do you know who Owen Rankin was?</p>	<p style="text-align: right;">Page 59</p> <p>1 My pad says the question, "Did the 2 talc that was used in any J and J Baby Powder 3 product ever contain any amount of asbestos," and I 4 think I want to see if this characterizes your 5 testimony correctly. There is no evidence that 6 Johnson's Baby Powder contained any amount of 7 asbestos and there never was?</p> <p>8 A That's correct.</p> <p>9 Q And that's what you were telling people?</p> <p>10 A Yes, that's correct.</p> <p>11 Q I want to talk a little bit about -- I 12 guess I should add, or will be. Is what the 13 document said, never was and never will be?</p> <p>14 A There never will be.</p> <p>15 Q Now I want to talk about the basis for 16 that statement. Is your understanding that tests 17 were actually done to verify that statement?</p> <p>18 A That's correct.</p> <p>19 Q And who did those tests?</p> <p>20 A They would have been performed at the 21 manufacturing sites. I don't know specifically who 22 did them, no.</p> <p>23 Q You never actually saw the tests yourself, 24 correct?</p> <p>25 A Correct.</p>
<p style="text-align: right;">Page 58</p> <p>1 A Yes. Owen Rankin was the President of 2 Baby Products.</p> <p>3 Q It states, "Just to let you know, I still 4 haven't heard back from the Seattle Post 5 Intelligencer."</p> <p>6 Do you recall an exchange with the 7 Seattle Post Intelligencer about Johnson's Baby 8 Powder and talc and asbestos?</p> <p>9 A No, I do not.</p> <p>10 Q And here, and I highlighted it, McKeegan 11 says to you and the president of your company, that 12 he kept impressing upon the reporter that there's no 13 asbestos in our product and never has been, correct?</p> <p>14 A That's what it says here, yes.</p> <p>15 MR. PLACITELLA: This is a good time 16 to take a break.</p> <p>17 THE VIDEOGRAPHER: The time is now 18 11:19 a.m. and we are going off the record. 19 (Recess taken)</p> <p>20</p> <p>21 THE VIDEOGRAPHER: The time is now 22 11:34 a.m. We are back on the record.</p> <p>23 BY MR. PLACITELLA:</p> <p>24 Q So, I have my pad again. By the way, it 25 says Drinker, Biddle, so I don't discriminate.</p>	<p style="text-align: right;">Page 60</p> <p>1 Q You relied upon the people that you went 2 to to tell you the entire truth, and nothing but the 3 entire truth, correct?</p> <p>4 A Yes. I know these people didn't lie. 5 They were scientists. They were valid.</p> <p>6 Q When you say they were done at 7 manufacturing, what manufacturing facilities are you 8 talking about?</p> <p>9 A I don't know, because that was not my 10 role. I didn't deal with this specifically. I 11 don't know.</p> <p>12 Q Do you know whether the testing was ever 13 done if the mines itself?</p> <p>14 A I don't know.</p> <p>15 Q Do you know whether they ever outsourced 16 the testing?</p> <p>17 A I don't know.</p> <p>18 Q Who specifically did you rely upon for 19 making the statement that there's no evidence that 20 Johnson's Baby Powder contained any amount of 21 asbestos, and there never was and there never will 22 be? Who specifically did you rely upon?</p> <p>23 A That would have been one of my team 24 members in quality assurance.</p> <p>25 Q It would be important to have a name. Who</p>



<p style="text-align: right;">Page 61</p> <p>1 do you recall?</p> <p>2 A Sam Jiwrajka and Don Hicks are the too</p> <p>3 names.</p> <p>4 Q Sam, can you give me the spelling of his</p> <p>5 last name? That's a tough one?</p> <p>6 A I'll try. J I W R A J K A, I think.</p> <p>7 Q What was his job?</p> <p>8 A He was and the head of quality assurance.</p> <p>9 Q And Don Hicks, his job was what?</p> <p>10 A Director of Quality Assurance.</p> <p>11 Q Now, so we are clear, you never read any</p> <p>12 testing reports, summary reports or anything before</p> <p>13 making these statements to patients -- I'm sorry,</p> <p>14 consumers or the media, correct?</p> <p>15 A That is correct.</p> <p>16 Q Is it your understanding then that Johnson</p> <p>17 and Johnson never received any reports indicating</p> <p>18 there was asbestos in Johnson's Baby Powder?</p> <p>19 A That is correct. There's no asbestos in</p> <p>20 Johnson's Baby Powder.</p> <p>21 Q When you had these conversations, for</p> <p>22 example, with the mothers and the consumers, your</p> <p>23 intent was to convey to them there was zero chance</p> <p>24 of exposing their families to asbestos at any level</p> <p>25 using Johnson's Baby Powder, correct?</p>	<p style="text-align: right;">Page 63</p> <p>1 A I'm not an asbestos expert, so I can't say</p> <p>2 one way or the other.</p> <p>3 Q You are a nurse, you have some health care</p> <p>4 background, correct?</p> <p>5 A I'm a nurse and I have health care</p> <p>6 background, but not in asbestos.</p> <p>7 Q Did you understand it was the position</p> <p>8 internally at Johnson and Johnson that there's no</p> <p>9 safe level of asbestos exposure?</p> <p>10 MS. O'CONNOR: Objection to the form</p> <p>11 of the question.</p> <p>12 Q Did you know that?</p> <p>13 MS. O'CONNOR: Objection.</p> <p>14 A Again, I'm not an expert on asbestos,</p> <p>15 so I can't talk about that specifically, no.</p> <p>16 Q So you didn't know internally at Johnson</p> <p>17 and Johnson that the official position was that</p> <p>18 there is no safe level of asbestos exposure?</p> <p>19 MS. O'CONNOR: Objection. Asked and</p> <p>20 answered. You can answer it again.</p> <p>21 A What I do know, did and do know is that</p> <p>22 the pure cosmetic talc used in Johnson's Baby Powder</p> <p>23 is free from asbestos.</p> <p>24 Q Do you know in your experience in working</p> <p>25 at Johnson and Johnson, and as a nurse, that the</p>
<p style="text-align: right;">Page 62</p> <p>1 A My job was to reassure them they could</p> <p>2 feel safe and comfortable using Johnson's Baby</p> <p>3 Powder because it does not contain asbestos.</p> <p>4 Q So there was zero chance of exposing their</p> <p>5 families to asbestos by using Johnson's Baby Powder.</p> <p>6 That was your in intent to convey to them, correct?</p> <p>7 A That is correct.</p> <p>8 Q And that was the corporate party line from</p> <p>9 the time you arrived at Johnson and Johnson until</p> <p>10 the time you left, correct?</p> <p>11 MS. O'CONNOR: Objection to the form</p> <p>12 of the question. You can answer.</p> <p>13 A No, I don't think of it as a party line.</p> <p>14 I think of it as the truth.</p> <p>15 Q That was the corporate position taken by</p> <p>16 Johnson and Johnson from the time you joined until</p> <p>17 the time you left, correct?</p> <p>18 A That was the true information, yes.</p> <p>19 Q You understood, I assume, that there is no</p> <p>20 safe level of asbestos exposure, correct?</p> <p>21 MS. O'CONNOR: Objection to the form</p> <p>22 of the question.</p> <p>23 Q You knew that?</p> <p>24 MS. O'CONNOR: Objection to the form</p> <p>25 of the question.</p>	<p style="text-align: right;">Page 64</p> <p>1 only known cause of mesothelioma is asbestos</p> <p>2 exposure?</p> <p>3 MS. O'CONNOR: Can I hear the</p> <p>4 question back.</p> <p>5 (The above question is read)</p> <p>6 MS. O'CONNOR: Objection to the form</p> <p>7 of the question. You can answer.</p> <p>8</p> <p>9 A Could you rephrase that?</p> <p>10 Q Did you understand that the only way you</p> <p>11 could develop mesothelioma was from exposuer to</p> <p>12 asbestos?</p> <p>13 A No. I don't know that.</p> <p>14 Q One way or the other?</p> <p>15 A I don't know of causes of mesothelioma.</p> <p>16 Q Did you know that asbestos exposure was</p> <p>17 linked to mesothelioma?</p> <p>18 A Yes, I know is has been linked to it, yes.</p> <p>19 Q Were you aware that there were many mom's</p> <p>20 who were diagnosed with mesothelioma where the</p> <p>21 doctors could not figure out what the source of</p> <p>22 their asbestos exposure was?</p> <p>23 MS. O'CONNOR: Objection to the form</p> <p>24 of the question.</p> <p>25 A No, I'm not aware of that.</p>

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<p>1 Q Did you know that asbestos exposure was 2 linked to lung cancer? 3 A There have been theories, allegations, 4 yes. 5 Q And you knew, for example, that asbestos 6 exposure could cause ovarian cancer, correct? 7 MS. O'CONNOR: Objection to the form 8 of the question. You can answer it. 9 A It was the same thing. We don't know what 10 causes cancer. 11 Q You know that asbestos exposure in the 12 medical literature was lined to ovarian cancer, 13 correct? 14 MS. O'CONNOR: Same objection. Asked 15 and answered. You can answer again. 16 A No, I don't know that. 17 Q You never discussed the relationship 18 between ovarian cancer and asbestos exposure in your 19 job at Johnson and Johnson? 20 A No, I didn't. 21 Q Does smoking cause lung cancer? 22 A It is thought to, yes. 23 Q Does asbestos cause lung cancer? 24 A I don't know. 25 Q So in making statements about the safety</p>	<p>1 asbestos in Johnson's Baby Powder. I don't know the 2 right way to answer that because there isn't 3 asbestos in the baby powder. 4 Q What I want you to assume for the moment 5 that there is evidence of asbestos in Johnson's Baby 6 Powder. Would you agree, if there was evidence of 7 asbestos in Johnson's Baby Powder, you would be 8 potentially exposing millions of people, including, 9 babes, to asbestos. Yes or no? 10 MS. O'CONNOR: Same objection. Calls 11 for speculation. Vague, ambiguous, asked and 12 answered. You can answer again. 13 A I don't want to assume. 14 Q Ma'am, can an honest and forthright 15 witness provide a simple answer to a simple 16 question? 17 MS. O'CONNOR: Objection, 18 argumentative. 19 Q Ma'am? 20 MS. O'CONNOR: Please don't do that 21 Mr. Placitella. Do you have a question? 22 Q Can you answer my question? Do you 23 believe an honest and forthright witness can provide 24 a simple answer to a simple question? 25 MR. GOLDSTEIN: Objection.</p>
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<p>1 of the Johnson's Baby Powder, you did not know what 2 diseases were associated with exposure to talc that 3 contained asbestos. Is that fair? 4 MS. O'CONNOR: Objection to the form 5 of the question. Vague, ambiguous. You can answer. 6 A Could you rephrase that? 7 Q I'll withdraw it. 8 If you were wrong and there was 9 evidence of asbestos in Johnson's Baby Powder, you 10 would be exposing millions of people, including 11 babies, to asbestos, correct? 12 MS. O'CONNOR: Objection to the form. 13 You can answer. 14 A But there is no asbestos in Johnson's Baby 15 Powder. 16 Q My question is as follows, please. It is 17 a yes or no answer. 18 If you were wrong, and there was 19 evidence of asbestos in Johnson's Baby Powder, you 20 would be exposing millions of people, including 21 babies, to asbestos, correct? 22 MS. O'CONNOR: Objection to the form 23 of the question. Asked and answered. You can 24 answer again. 25 A It is a hypothetical. There isn't</p>	<p>1 MS. O'CONNOR: Objection. 2 A Yes, to a simple question. 3 Q So I'll ask you again. If the proof 4 demonstrates that there was, in fact, asbestos in 5 Johnson's Baby Powder, then Johnson and Johnson 6 would have exposed millions of people, including 7 babies, to asbestos, correct? 8 MS. O'CONNOR: Objection to the form. 9 Vague and ambiguous, calls for speculation, asked 10 and answered multiple times. 11 MR. PLACITELLA: I want to say one 12 thing. I know you are pro hoc. Asked and answered 13 is not a proper objection in our jurisdiction. 14 Can you read my question, please, and 15 I would like an answer. 16 MS. O'CONNOR: She answered your 17 question. 18 MR. PLACITELLA: Please don't do 19 that. Please don't do that. 20 MS. O'CONNOR: It is argumentative 21 and threatening to the witnesses. 22 MR. PLACITELLA: I'm not threatening 23 anyone. I'm going to make a phone call if you keep 24 making objection outside of court rules, and I'm ask 25 the lawyer from Drinkle, Biddle to come sit in the</p>

<p style="text-align: right;">Page 69</p> <p>1 room if that is required. So please follow the</p> <p>2 rules.</p> <p>3 Can you read my question back.</p> <p>4 (The above question is read)</p> <p>5 MS. O'CONNOR: Same objection.</p> <p>6</p> <p>7 A It is an assumption, yes. There would</p> <p>8 be -- depends on how much asbestos you found</p> <p>9 Circumstances. But we are talking about pure grade</p> <p>10 cosmetic talc, there's no asbestos in the product.</p> <p>11 Q We are going to get to that. Do you agree</p> <p>12 with me that no child should needlessly be exposed</p> <p>13 to asbestos?</p> <p>14 A Yes.</p> <p>15 Q Do you agree with me that no adult should</p> <p>16 needlessly be exposed to asbestos?</p> <p>17 A Yes.</p> <p>18 Q Do you agree with me that when you were at</p> <p>19 Johnson and Johnson it was your understanding that</p> <p>20 safety questions about products must be answered</p> <p>21 fully and honestly?</p> <p>22 A Yes, absolutely.</p> <p>23 Q Do you agree with me that if there was</p> <p>24 asbestos in Johnson's Baby Powder, Johnson and</p> <p>25 Johnson had a duty to find it?</p>	<p style="text-align: right;">Page 71</p> <p>1 MR. PLACITELLA: We will her see the</p> <p>2 whole video and let her decide.</p> <p>3 Q Am I correct that -- and I apologize if</p> <p>4 you think the tone is offensive. I'll try to dial</p> <p>5 it down slightly, okay?</p> <p>6 Am I correct you don't know whether</p> <p>7 the testing methods used by Johnson and Johnson were</p> <p>8 capable of providing the same guarantees you were</p> <p>9 giving mothers that there was zero chance of</p> <p>10 asbestos being in Johnson Baby Powder?</p> <p>11 MS. O'CONNOR: Objection to the form</p> <p>12 of the question. You can answer.</p> <p>13 A As I said, I'm not an expert in the</p> <p>14 testing, so I can't speak to the testing.</p> <p>15 Q So the answer would be you don't know?</p> <p>16 A I don't know. That's not my role.</p> <p>17 Q Do you agree with me that Johnson and</p> <p>18 Johnson should have used the most sensitive test</p> <p>19 possible that would work in determining whether</p> <p>20 there was asbestos in the Johnson's Baby Powder?</p> <p>21 MS. O'CONNOR: Objection to the form</p> <p>22 of the question. Vague and ambiguous.</p> <p>23 Q Let me ask the question this way. Do you</p> <p>24 agree with me that Johnson and Johnson had a</p> <p>25 responsibility to do everything possible to make</p>
<p style="text-align: right;">Page 70</p> <p>1 A Well, Johnson and Johnson did test to see</p> <p>2 if there was asbestos in the product.</p> <p>3 Q Here is my question. Do you agree with me</p> <p>4 if there is asbestos in the Johnson's Baby Powder,</p> <p>5 Johnson and Johnson had a duty to find it?</p> <p>6 MS. O'CONNOR: Objection to the form</p> <p>7 of the question.</p> <p>8 A They fulfilled that duty by testing for</p> <p>9 asbestos.</p> <p>10 Q You don't know anything about the testing</p> <p>11 methods that were used, correct?</p> <p>12 A No. That was not my role.</p> <p>13 Q Am I correct you don't know anything about</p> <p>14 whether the testing methods used by Johnson and</p> <p>15 Johnson were capable of providing the same</p> <p>16 guarantees you were giving mothers that there was</p> <p>17 zero chance of asbestos being in Johnson's Baby</p> <p>18 Powder?</p> <p>19 MS. O'CONNOR: Objection to the form.</p> <p>20 I would object to Mr. Placitella's tone. You are</p> <p>21 really starting to cross the line here.</p> <p>22 MR. PLACITELLA: Stop it. We</p> <p>23 will show the judge the video and --</p> <p>24 MS. O'CONNOR: I'll be happy to show</p> <p>25 the judge the tone of your voice.</p>	<p style="text-align: right;">Page 72</p> <p>1 sure there was no asbestos in the talc that was used</p> <p>2 in their products?</p> <p>3 MS. O'CONNOR: Objection to the form.</p> <p>4 Vague and ambiguous.</p> <p>5 A Yes, and I believe that Johnson and</p> <p>6 Johnson did everything possible.</p> <p>7 Q Okay. And you agree with me that the</p> <p>8 question of whether there was asbestos or not in</p> <p>9 products that Johnson and Johnson was selling is a</p> <p>10 matter of life and death?</p> <p>11 A Can you rephrase that question?</p> <p>12 Q Yes. Do you agree with me the question of</p> <p>13 whether there was asbestos in the Johnson and</p> <p>14 Johnson talc product is a matter of life and death?</p> <p>15 Sub.</p> <p>16 MR. GOLDSTEIN: Objection to the</p> <p>17 form.</p> <p>18 MS. O'CONNOR: Same objection.</p> <p>19 A Again, there's no asbestos in the</p> <p>20 products. It is hard for me to answer that.</p> <p>21 Q Now, do you have a recollection of working</p> <p>22 on a case called Krushinski?</p> <p>23 A No.</p> <p>24 Q Do you recall actually swearing under oath</p> <p>25 that there was no asbestos in the Johnson's Baby</p>

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<p>1 Powder?</p> <p>2 A I don't recall that, no.</p> <p>3 Q Do you recall swearing under oath that</p> <p>4 there was no asbestos in any of the mines where the</p> <p>5 baby powder came from?</p> <p>6 A I don't recall that, no.</p> <p>7 Q Do you recall swearing under oath that</p> <p>8 there was no Tremolite in any of the mines where the</p> <p>9 baby powder came from?</p> <p>10 A I don't recall that.</p> <p>11 Q Do you know what Tremolite is?</p> <p>12 A A mineral.</p> <p>13 Q Do you know it is a form of asbestos?</p> <p>14 MS. O'CONNOR: Objection to the form.</p> <p>15 You can answer.</p> <p>16 A No, I don't know that.</p> <p>17 Q Okay. I'm going to show you what's been</p> <p>18 marked 277 and ask you to take a look at this. 277,</p> <p>19 while you are looking at it, is a set of</p> <p>20 Interrogatories submitted by Johnson and Johnson in</p> <p>21 the Law Division of Middlesex County in a case</p> <p>22 called Krushinski versus Johnson and Johnson. Do you</p> <p>23 see that?</p> <p>24 A Yes.</p> <p>25 Q And if you flip to the last page, the last</p>	<p>1 A Yes.</p> <p>2 Q Now, before think signing this, did you</p> <p>3 review these Answers to Interrogatories?</p> <p>4 A I have to look and see what it is.</p> <p>5 Q Please take a minute.</p> <p>6 A Okay.</p> <p>7 Q And the answer to my question is?</p> <p>8 A What was the question?</p> <p>9 Q Did you review these answers before</p> <p>10 signing the certification?</p> <p>11 A I would have provided this information to</p> <p>12 our legal department and reviewed it with our legal</p> <p>13 department, yes.</p> <p>14 Q So, can you tell me what did you do to</p> <p>15 verify that the information contained in these</p> <p>16 Interrogatory answers was true and accurate, as you</p> <p>17 certified?</p> <p>18 MS. O'CONNOR: Objection to the</p> <p>19 form. You can answer.</p> <p>20 A I relied upon the experts, and as it even</p> <p>21 says here, that the answers were compiled, are from</p> <p>22 numerous sources, so, again, I was the point person</p> <p>23 to accumulate the information from the valid</p> <p>24 sources.</p> <p>25 Q So you collected the various documents and</p>
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<p>1 page is a certification dated May 23, 2000, correct?</p> <p>2 A Yes.</p> <p>3 Q And that's your signature?</p> <p>4 A Yes, it is.</p> <p>5 Q And you signed the certification under</p> <p>6 penalty of perjury, correct?</p> <p>7 A Yes.</p> <p>8 Q What you state is that you are employed by</p> <p>9 Johnson and Johnson Consumer Companies, correct?</p> <p>10 A Correct.</p> <p>11 Q That you looked at the interrogatory</p> <p>12 answers that were prepared, correct?</p> <p>13 MS. O'CONNOR: I'm going to object.</p> <p>14 MR. PLACITELLA: Let me read it and</p> <p>15 I'll trying to shortcut it.</p> <p>16 Q "The foregoing Answers to Interrogatories</p> <p>17 were prepared with the assistance and advice of</p> <p>18 counsel for JJCCI upon whose advice and information</p> <p>19 JJCCI and I relied." Correct?</p> <p>20 A That is what it says.</p> <p>21 Q "The foregoing answers are true and</p> <p>22 correct to the best of my knowledge, information and</p> <p>23 belief. If any of the foregoing statements made by</p> <p>24 me are willfully false, I may be subject to</p> <p>25 punishment." Do you see that?</p>	<p>1 handed them to the lawyers? How did it work?</p> <p>2 A I don't remember exactly. This is 17</p> <p>3 years ago. My process would have been to identify</p> <p>4 the appropriate people to answer these and then they</p> <p>5 would, or maybe the three of us, would have a</p> <p>6 conversation with our legal department and then it</p> <p>7 would be compiled, put together.</p> <p>8 Q And who were the people that you relied</p> <p>9 upon to answer these questions, to help you answer</p> <p>10 these questions?</p> <p>11 A Again, departments. It would be a lot of</p> <p>12 manufacturing, a lot of quality assurance, looks</p> <p>13 like pretty much and then they would have</p> <p>14 information.</p> <p>15 Q What people?</p> <p>16 A I don't remember the people I dealt with.</p> <p>17 One person's name is mentioned here and I know he</p> <p>18 was quality assurance, Randy Quarter. A long time</p> <p>19 ago, but I don't remember any names.</p> <p>20 Q Did you actually take possession and look</p> <p>21 at documents before you signed this?</p> <p>22 A No. That wouldn't have been my role to do</p> <p>23 that, no.</p> <p>24 Q So if you didn't physically look at the</p> <p>25 documents that were being relied upon, how would you</p>

<p style="text-align: right;">Page 77</p> <p>1 know they were true, the answers were true?</p> <p>2 MS. O'CONNOR: Objection to the form.</p> <p>3 A This was done with our attorneys, so the</p> <p>4 whole process done through the advice of the</p> <p>5 attorney, too.</p> <p>6 Q But with all due respect, it says this is</p> <p>7 true and accurate to the best of my knowledge, and</p> <p>8 my question is what specifically did you do to</p> <p>9 assure yourself that it was true and accurate? You</p> <p>10 never looked at a single document</p> <p>11 A No.</p> <p>12 MS. O'CONNOR: Objection to the form</p> <p>13 of the question. You can answer.</p> <p>14 A I was relying on the experts.</p> <p>15 Q The experts that you relied upon, you</p> <p>16 don't remember who they were?</p> <p>17 A No. Seventeen years ago.</p> <p>18 Q I'm just asking a question.</p> <p>19 A No.</p> <p>20 Q It says you also relied upon your lawyers.</p> <p>21 What lawyers?</p> <p>22 A It would have been, I think at this time,</p> <p>23 John O'Shaughnessy, but I'm not sure of the time frame</p> <p>24 because I don't remember this.</p> <p>25 Q Had you executed certifications similar to</p>	<p style="text-align: right;">Page 79</p> <p>1 A Yes.</p> <p>2 Q In 17 you state, "To the best of</p> <p>3 defendant's knowledge, talc used in the manufacture</p> <p>4 of Johnson and Johnson Baby Powder never</p> <p>5 contained asbestos in any form or Tremolite.</p> <p>6 Defendant's sources of talc were selected for</p> <p>7 their lack of contaminants and further</p> <p>8 testing was performed over a significant number of</p> <p>9 years by outside laboratories, which verified that</p> <p>10 defendant's talc sources did not contain asbestos or</p> <p>11 Tremolite."</p> <p>12 Do you see that?</p> <p>13 A Yes, I do.</p> <p>14 Q What is the basis of that statement?</p> <p>15 MS. O'CONNOR: Objection to the form</p> <p>16 of the question. You can answers.</p> <p>17 A Again, this would be information that was</p> <p>18 obtained from the appropriate department.</p> <p>19 Q Who gave you that information?</p> <p>20 A It would have been either manufacturing or</p> <p>21 quality assurance.</p> <p>22 Q But you don't remember?</p> <p>23 A No. Seventeen years ago, no.</p> <p>24 Q It talks about studies and testing done by</p> <p>25 outside laboratories indicating that the sources did</p>
<p style="text-align: right;">Page 78</p> <p>1 this in other cases?</p> <p>2 A Not that I remember.</p> <p>3 Q I want to go to a couple. I'm not going</p> <p>4 to go through all these questions, but I want to go</p> <p>5 through a few of them.</p> <p>6 If you could look on page 5. By the</p> <p>7 way, do you remember what this case was about?</p> <p>8 A No.</p> <p>9 Q Do you know what the injury was that was</p> <p>10 being claimed?</p> <p>11 A Other than what is here, I have no memory</p> <p>12 of it.</p> <p>13 Q What is here?</p> <p>14 A Something about talcosis.</p> <p>15 Q In 11 you respond referencing medical</p> <p>16 literature concerning talc and talc companies. Do</p> <p>17 you see that?</p> <p>18 A I see number 11.</p> <p>19 Q Page 5, you also say that you provided</p> <p>20 studies to the plaintiffs. Where did you get those</p> <p>21 studies?</p> <p>22 MS. O'CONNOR: Objection to the form.</p> <p>23 A I don't know.</p> <p>24 Q Can you go to 17 and 18 and I'll blow it</p> <p>25 up. Are you with me?</p>	<p style="text-align: right;">Page 80</p> <p>1 not contain asbestos or Tremolite. Do you see that?</p> <p>2 A Yes.</p> <p>3 Q Have you ever seen any of that testing</p> <p>4 information?</p> <p>5 A No.</p> <p>6 Q Down below it says, number 18, "Over a</p> <p>7 number of years, defendant had an ongoing process of</p> <p>8 testing its source talc for Johnson and Johnson's</p> <p>9 Baby Powder for asbestos, Tremolite or other</p> <p>10 contaminants" Do you see that?</p> <p>11 A Yes.</p> <p>12 Q When you say source talc, you mean the</p> <p>13 mines, correct?</p> <p>14 MS. O'CONNOR: Objection to the form</p> <p>15 of the question. You can answer.</p> <p>16 A To me that means the talc used in</p> <p>17 Johnson's Baby Powder.</p> <p>18 Q It came from the mines.</p> <p>19 MS. O'CONNOR: Same objection.</p> <p>20 A Originally.</p> <p>21 Q That's talc sources.</p> <p>22 A That's the source of the talc. The source</p> <p>23 talc is the talc that is used in the powder. That</p> <p>24 is the way I interpret that.</p> <p>25 Q I want to go back to that in a second.</p>



<p style="text-align: right;">Page 81</p> <p>1 It says, "It never had asbestos, 2 Tremolite or any other contaminant." Correct? 3 A That is correct. 4 Q And that included heavy metals like 5 arsenic, things like that? 6 A We are talking about other contaminants 7 and specifically asbestos and Tremolite here. 8 Q Did you ever have information or were you 9 ever provided information indicating that testing 10 showed that the talc that was used in Johnson's Baby 11 Powder contained arsenic? 12 A No. 13 Q How about nickel? 14 A No. 15 Q How about Cadmium? 16 A No. 17 Q How about chromium? 18 A No. 19 Q If that testing existed, is that something 20 you would want to have seen before making the 21 representations to consumers and in sworn Answers to 22 Interrogatories? 23 MS. O'CONNOR: Objection to the form 24 of the question. You can answer. 25 A If there were significant amounts, then we</p>	<p style="text-align: right;">Page 83</p> <p>1 contaminants, and further testing was performed over 2 a significant number of years by outside 3 laboratories which verified that the defendant's 4 talc sources did not contain asbestos or tremolite." 5 It doesn't say baby powder, it says talc sources. 6 I'm asking you what did you mean by 7 talc sources? 8 A Again, that's not my expertise, so I 9 didn't choose those words. But the important thing 10 here is that it was tested for years and it did not 11 contain asbestos. 12 Q I understand, but respectfully, you 13 verified these as true and accurate to the best of 14 your knowledge. You must have known what you meant 15 when you stated it. My question is what did you 16 mean by talc sources? 17 MS. O'CONNOR: Objection to the form 18 of the question. 19 A This was information that was given by the 20 experts in this part of the business, manufacturing 21 and quality assurance. 22 Q Would the talc source include the mine 23 where the talc came from? 24 A I didn't write those words, so I don't 25 know what they meant.</p>
<p style="text-align: right;">Page 82</p> <p>1 would address it. 2 Q What does that mean, significant amounts? 3 A It is, again, one of those things if, if. 4 It is an assumption, so it is hard for me to 5 address. 6 Q It says in 18, "The testing was performed 7 by outside laboratories, both McCrone and R.J. 8 Lee." Do you see that? 9 A Yes. 10 Q Did you, before signing these, ever see 11 any of the testing results from McCrone and R.J. 12 Lee? 13 A No. 14 Q You say in answer to number 17, "The 15 testing that was performed verified that the 16 defendant's talc sources did not contain asbestos or 17 Tremolite." What does that mean, talc sources? 18 A It says the Johnson's Baby Powder never 19 contained, and it says the source of talc was 20 selected for the lack of contaminants, but then it 21 was further tested. 22 Q It says, let's read it. "Defendants 23 sources of talc." That is where they got it, right? 24 A Correct. 25 Q "Were selected for their lack of</p>	<p style="text-align: right;">Page 84</p> <p>1 Q You have no idea in answering the 2 Interrogatories what you meant when you verified 3 that the talc sources did not have asbestos or 4 tremolite? 5 MR. GOLDSTEIN: Objection. 6 MS. O'CONNOR: Objection, 7 mischaracterizes the testimony. 8 A I relied on the experts and this is the 9 information that they provided. 10 Q And you are not able to identify for me 11 what experts? 12 MS. O'CONNOR: Objection to the form. 13 You can answer. 14 A I've given you names I remember. 15 Seventeen years ago. I don't remember them all. 16 Q When these Interrogatories were verified, 17 where were the documents located that backed up 18 these answers? 19 MS. O'CONNOR: Objection to the form 20 of the question. You can answer. 21 A I don't know where they physically were 22 located. Only the departments and the experts I 23 dealt with for the information. 24 Q You never physically saw or touched any of 25 the documents that were the basis for these answers?</p>

<p style="text-align: right;">Page 85</p> <p>1 MR. GOLDSTEIN: Objection.</p> <p>2 MS. O'CONNOR: Objection to the form.</p> <p>3 You can answers.</p> <p>4 A That is correct, I didn't.</p> <p>5 Q So if we wanted to find out where the</p> <p>6 documents were that served as the basis for these</p> <p>7 sworn responses, how would we find that out? Who</p> <p>8 would we talk to?</p> <p>9 MS. O'CONNOR: Objection on the form</p> <p>10 of the question.</p> <p>11 A I would direct you to manufacturing or</p> <p>12 quality assurance, whoever is responsible for that</p> <p>13 now.</p> <p>14 Q Can you look at number 19. Number 19 asks</p> <p>15 for prior lawsuits and any testimony, witnesses, et</p> <p>16 cetera, from prior lawsuits involving Johnson's Baby</p> <p>17 Powder, and I'm paraphrasing. You can look at it to</p> <p>18 make sure I'm doing it correctly.</p> <p>19 A Yes, I see that.</p> <p>20 Q Is that accurate?</p> <p>21 A What this is asking for if there were any</p> <p>22 claims or allegations of talcosis or pulmonary</p> <p>23 fibrosis through exposure to Johnson's Baby Powder.</p> <p>24 Q Right. If people testified in those</p> <p>25 cases, give us the testimony. Isn't that what it</p>	<p style="text-align: right;">Page 87</p> <p>1 Interrogatories, were the files from the Selby and</p> <p>2 Gambino case made available to you?</p> <p>3 A I don't remember.</p> <p>4 Q When you were working --By the way, do you</p> <p>5 recall working any of these two cases?</p> <p>6 A No.</p> <p>7 Q When you were working on litigation</p> <p>8 related to baby powder for Johnson and Johnson, what</p> <p>9 is your recollection of where the files were being</p> <p>10 stored that related to that litigation?</p> <p>11 A Of anything relating to litigation, would</p> <p>12 have been stored with the legal department.</p> <p>13 Q Do you understand what a litigation hold</p> <p>14 is?</p> <p>15 A Yes.</p> <p>16 Q What is a litigation hold?</p> <p>17 A My understanding is that once a litigation</p> <p>18 has been declared, or served, any information that</p> <p>19 any department has concerning that particular case,</p> <p>20 should not -- should be given to the law department</p> <p>21 and/or held until further information.</p> <p>22 Q So for example, and you are not allowed to</p> <p>23 get rid of that, correct?</p> <p>24 A Correct.</p> <p>25 Q You have to save it in perpetuity. Am I</p>
<p style="text-align: right;">Page 86</p> <p>1 asks for?</p> <p>2 A Yes.</p> <p>3 Q You list here two cases that were filed in</p> <p>4 Middlesex County, one from 1983 and one from -- one</p> <p>5 case in Middlesex county in 1983 and another case in</p> <p>6 California in 1993. Do you see that?</p> <p>7 A Yes.</p> <p>8 Q Where did that information come from?</p> <p>9 A The legal department.</p> <p>10 Q The legal department had possession of</p> <p>11 these files at the time you answered these</p> <p>12 Interrogatories. Is that your understanding?</p> <p>13 MS. O'CONNOR: Objection to the form</p> <p>14 of the question. You can answer.</p> <p>15 A I don't remember, but that would have been</p> <p>16 the process, yes.</p> <p>17 Q So when you listed the Selby case and the</p> <p>18 Gambino case, that information came directly from</p> <p>19 documents that were in the possession of the legal</p> <p>20 department, from your understanding, correct?</p> <p>21 MS. O'CONNOR: Objection to the form</p> <p>22 of the question. You can answer.</p> <p>23 A That there would have been the process,</p> <p>24 yes.</p> <p>25 Q At the time you answered these</p>	<p style="text-align: right;">Page 88</p> <p>1 correct?</p> <p>2 MS. O'CONNOR: Objection. Calls for</p> <p>3 a legal conclusion. You may answer.</p> <p>4 A Untilyou hear further</p> <p>5 Q Is it your understanding that a litigation</p> <p>6 hold would have then been put on the Gambino case</p> <p>7 back in 1993?</p> <p>8 MS. O'CONNOR: Objection. Calls for</p> <p>9 speculation. Calls for a legal conclusion. You can</p> <p>10 answer.</p> <p>11 A I don't remember.</p> <p>12 Q I guess here is my question. How do we</p> <p>13 know that the information that was available to you</p> <p>14 when you were swearing to these Interrogatories in</p> <p>15 2000 was the same information that was made</p> <p>16 available in the Gambino case back in 1983? How do</p> <p>17 we know?</p> <p>18 MS. O'CONNOR: Objection to the form</p> <p>19 of the question. Vague, ambiguous, calls for</p> <p>20 speculation.</p> <p>21 A I don't know. I can't say. I don't know</p> <p>22 what was given or done. I don't know what the</p> <p>23 Gambino case was about.</p> <p>24 Q Well, it involved Johnson's Baby Powder.</p> <p>25 That's what you stated.</p>



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<p>1 A Yes. I don't know.</p> <p>2 Q Is it your understanding from your</p> <p>3 understanding of corporate policy, that everything</p> <p>4 from the Gambino case, for example, would have been</p> <p>5 preserved under a litigation hold and available to</p> <p>6 you when answering discovery in the crush case?</p> <p>7 MS. O'CONNOR: Objection to the form</p> <p>8 of the question. Vague and ambiguous, calls for a</p> <p>9 legal conclusion.</p> <p>10 A If there were a legal hold, I would abide</p> <p>11 by the rules of that legal hold.</p> <p>12 Q I'm not pointing fingers at you. What I'm</p> <p>13 asking you is, it your understanding that whatever</p> <p>14 information was available in the Gambino case should</p> <p>15 have been available you to in the Krushinski case?</p> <p>16 MS. O'CONNOR: Objection. Vague and</p> <p>17 ambiguous, calls for speculation, calls for a legal</p> <p>18 conclusion. You may answer.</p> <p>19 A I really don't know because other than the</p> <p>20 fact they may be the same product, I don't know what</p> <p>21 the case was about, sorry to say.</p> <p>22 Q We would have to ask legal to look at the</p> <p>23 files inside of legal. Is that fair, too?</p> <p>24 MS. O'CONNOR: Objection to the form.</p> <p>25 Calls for speculation.</p>	<p>1 A The talc was tested and it was determined</p> <p>2 that it did not contain any asbestos or Tremolite.</p> <p>3 MS. O'CONNOR: Mark that Musco-1.</p> <p>4 (The above document is marked</p> <p>5 Musco-1.)</p> <p>6</p> <p>7 Q Am I correct that you and Johnson and</p> <p>8 Johnson, when I say you, I mean Johnson and Johnson,</p> <p>9 not you personally, knew that the talc used in</p> <p>10 Johnson's Baby Powder could be inhaled by human</p> <p>11 beings?</p> <p>12 A Yes. Anything can be inhaled.</p> <p>13 Q You knew that the talc that could be</p> <p>14 inhaled from Johnson's Baby Powder would reach or</p> <p>15 could reach deep into the lung. You knew that,</p> <p>16 correct?</p> <p>17 MS. O'CONNOR: Objection to the form.</p> <p>18 You can answer it.</p> <p>19 A Yes.</p> <p>20 Q You knew that the talc, once inhaled, the</p> <p>21 baby powder once inhaled, could travel all the way</p> <p>22 to a woman's ovary, correct?</p> <p>23 MS. O'CONNOR: Objection to the form</p> <p>24 of the question. Vague, ambiguous. You can answer</p> <p>25 it.</p>
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<p>1 A They would have the files, yes.</p> <p>2 Q I'm looking at the interrogatories that</p> <p>3 you answered, and I want to write down something</p> <p>4 else.</p> <p>5 This is what I'm going to write down</p> <p>6 and I want to make sure I ask you first. According</p> <p>7 to the sworn answers you provided, the talc sources</p> <p>8 used by Johnson and Johnson to make Johnson's Baby</p> <p>9 Powder did not contain any asbestos or Tremolite.</p> <p>10 Fair?</p> <p>11 MS. O'CONNOR: Objection to the form</p> <p>12 of the question. You can answer.</p> <p>13 A As per the information provided to me by</p> <p>14 the experts, yes.</p> <p>15 Q So that's what I want to write. I want to</p> <p>16 rip this off and ask you to look at it and tell me</p> <p>17 if it is accurate, and if it is, I'm going to have it</p> <p>18 be marked.</p> <p>19 MS. O'CONNOR: Objection. Vague,</p> <p>20 ambiguous. Objection to the creation of the</p> <p>21 exhibit. I don't know what you are asking.</p> <p>22 Q Does that accurately reflect what you</p> <p>23 testified to?</p> <p>24 MS. O'CONNOR: Same objection. You</p> <p>25 may answer.</p>	<p>1 A No, I didn't know that.</p> <p>2 A But you knew that there was a serious</p> <p>3 issue, at the very least, concerning whether the</p> <p>4 talc that was inhaled from Johnson's Baby Powder</p> <p>5 could reach a woman's ovary, correct? You knew that</p> <p>6 was a serious issue?</p> <p>7 MS. O'CONNOR: Objection. Vague,</p> <p>8 same ambiguous, outside the scope of this case, but</p> <p>9 you can answer.</p> <p>10 A No. There was allegations, but no facts.</p> <p>11 Q Well, it was a subject that was discussed</p> <p>12 in a very serious way inside of Johnson and Johnson,</p> <p>13 whether the talc that would be inhaled could reach</p> <p>14 all the way to a woman's ovary, correct?</p> <p>15 MS. O'CONNOR: Objection to the form</p> <p>16 of the question. You can answer.</p> <p>17 A Yes, it was discussed in a very serious</p> <p>18 way because we took any allegations serious. We</p> <p>19 didn't ignore anything, whether it came through,</p> <p>20 from an individual or a group. So, yes, it was</p> <p>21 discussed seriously.</p> <p>22 Q In fact, it was discussed that -- you</p> <p>23 discussed whether studies should be done to in fact</p> <p>24 verify whether that was the case, correct?</p> <p>25 A It was discussed whether there was any</p>

<p style="text-align: right;">Page 93</p> <p>1 truth or any scientific evidence to these</p> <p>2 allegations, and the best way for us to address</p> <p>3 them.</p> <p>4 Q And discussed was in a serious way,</p> <p>5 whether a study should actually be conducted by</p> <p>6 Johnson and Johnson to prove or disprove whether</p> <p>7 talc inhaled would reach all the way to a woman's</p> <p>8 ovary, correct?</p> <p>9 MS. O'CONNOR: Objection to the form</p> <p>10 of the question. Vague, ambiguous, compound. You</p> <p>11 can answer.</p> <p>12 A I don't remember. I don't know.</p> <p>13 Q And in fact, you were part of those</p> <p>14 discussions, weren't you?</p> <p>15 A I was part of the team that would look at</p> <p>16 the allegations.</p> <p>17 Q When it was suggested that a study be done</p> <p>18 to determine whether inhaled talc could reach all</p> <p>19 the way to a woman's ovary, that was rejected</p> <p>20 because it wouldn't be good for Johnson and Johnson</p> <p>21 to find out the truth, correct?</p> <p>22 MS. O'CONNOR: Objection to the form</p> <p>23 of the question. Argumentative, vague, ambiguous.</p> <p>24 You may answer.</p> <p>25 A As I said earlier, I don't remember the</p>	<p style="text-align: right;">Page 95</p> <p>1 development, regulatory, legal. That's as much as I</p> <p>2 can remember.</p> <p>3 Q One of the things you were worried about</p> <p>4 was whether the National Toxicology Program was</p> <p>5 going to declare that talc was a carcinogen,</p> <p>6 correct?</p> <p>7 A Yes. Just like I said before, we take all</p> <p>8 that very seriously.</p> <p>9 Q And it is in that context that it was</p> <p>10 suggested within Johnson and Johnson that we might</p> <p>11 as well just find out, does inhaled talc reach all</p> <p>12 the way to a woman's ovary, right?</p> <p>13 MS. O'CONNOR: Objection to the form.</p> <p>14 Vague, ambiguous, calls for speculation.</p> <p>15 A Those are your words. I don't recall</p> <p>16 that.</p> <p>17 Q I'm going to show you what's been marked</p> <p>18 262. 262, the Bates number is 576314. We are going</p> <p>19 to go to the screen now.</p> <p>20 The top email is dated May 7, 2001,</p> <p>21 and is from John Hopkins to a whole bunch of people,</p> <p>22 including yourself, correct?</p> <p>23 A Yes.</p> <p>24 Q One of the people who gets it is Helen</p> <p>25 Han Hsu. What was her job?</p>
<p style="text-align: right;">Page 94</p> <p>1 specific studies that may have been tested -- or</p> <p>2 discussed. But the important thing is we did take</p> <p>3 it seriously, and if there was any solid, scientific</p> <p>4 evidence, we would address that.</p> <p>5 Q And it was seriously discussed and it was</p> <p>6 rejected because it might actually show results that</p> <p>7 Johnson and Johnson would not have answers to,</p> <p>8 correct?</p> <p>9 MS. O'CONNOR: Objection to the form</p> <p>10 of the question. You can answer.</p> <p>11 A That's what you are saying. I don't agree</p> <p>12 with that.</p> <p>13 Q By the way, there was a time when part of</p> <p>14 your function involved something known as the</p> <p>15 National Toxicology Program. Do you recall that?</p> <p>16 MS. O'CONNOR: Objection to the form</p> <p>17 of the question. Vague and ambiguous.</p> <p>18 A It wasn't part of my function.</p> <p>19 Q It was something you dealt with in your</p> <p>20 role?</p> <p>21 MS. O'CONNOR: Objection to the form.</p> <p>22 Vacate, ambiguous. You may answer.</p> <p>23 A I was part of a team.</p> <p>24 Q And who was on that team?</p> <p>25 A Would have had toxicology, research and</p>	<p style="text-align: right;">Page 96</p> <p>1 A Toxicology.</p> <p>2 Q And this was from John Hopkins. What was</p> <p>3 his job?</p> <p>4 A He was an outside consultant.</p> <p>5 Q His email -- he doesn't haven't a Johnson</p> <p>6 and Johnson email. It is Zoom Company U.K.</p> <p>7 Correct?</p> <p>8 MS. O'CONNOR: Objection to the form.</p> <p>9 Q Did you know John Hopkins when he worked</p> <p>10 at Johnson and Johnson?</p> <p>11 A No, I did not.</p> <p>12 Q So you never had any interaction with John</p> <p>13 Hopkins? Did you know he worked at Johnson and</p> <p>14 Johnson?</p> <p>15 A No.</p> <p>16 Q Your sole interaction with John Hopkins is</p> <p>17 when he was an outside consultant, correct?</p> <p>18 MS. O'CONNOR: Objection to the form.</p> <p>19 You may answer.</p> <p>20 A Yes, that is correct.</p> <p>21 Q What was his role?</p> <p>22 A I cannot say specifically. I don't know.</p> <p>23 Q So then the other person this was sent to</p> <p>24 was Lorena Telofski. Who was she?</p> <p>25 A An R and D person.</p>

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<p>1 Q Within your division, correct?</p> <p>2 A Correct.</p> <p>3 Q Owen Rankin we talked about.</p> <p>4 Fritz Grutzner, who was that?</p> <p>5 A Vice-President of the baby company, Baby</p> <p>6 Products Company.</p> <p>7 Q Vice-President of the whole company?</p> <p>8 A Of the Baby Division.</p> <p>9 Q Then you have the corporate lawyer, John</p> <p>10 O'Shaughnessy?</p> <p>11 A Correct.</p> <p>12 Q Then you have Clayton Paterson. Who was</p> <p>13 that?</p> <p>14 A Regulatory attorney.</p> <p>15 Q So he is a lawyer for regulations?</p> <p>16 A Yes.</p> <p>17 Q Then you have Kathleen Dittman. Who is</p> <p>18 she?</p> <p>19 A She was a global marketing person.</p> <p>20 Q Do you have Sarah Colamarino. Who was</p> <p>21 she?</p> <p>22 A Communications.</p> <p>23 Q Michael Chudkowski you talked about before?</p> <p>24 A Yes.</p> <p>25 Q Marjorie McTernan?</p>	<p>1 A Yes.</p> <p>2 Q Helen, it is raised as part of the</p> <p>3 discussion, whether you are going to share with the</p> <p>4 federal government the information you have</p> <p>5 concerning Oral lavage data and the response when</p> <p>6 someone is exposed to Johnson's Baby Powder,</p> <p>7 correct?</p> <p>8 MS. O'CONNOR: Objection to the form</p> <p>9 of the question. You can answer.</p> <p>10 A I have to read this.</p> <p>11 Q Sure. Take your time.</p> <p>12 A What is the question?</p> <p>13 Q It talks about exchanges or information</p> <p>14 being provided by Johnson and Johnson to the</p> <p>15 National Toxicology Program, correct?</p> <p>16 A Yes.</p> <p>17 Q And Helen writes, "For your information,</p> <p>18 although I did receive the 4-29 meeting minutes</p> <p>19 recommending the inclusion of the oral lavage data</p> <p>20 data and the response, I elect not to do so for the</p> <p>21 reasons below." Are you with me?</p> <p>22 A I see that, yes.</p> <p>23 Q It says one. "I don't know what the oral</p> <p>24 data would add to the argument we put forth in the</p> <p>25 document. NTP, that's at the National Toxicology</p>
Page 98	Page 100
<p>1 A Regulatory.</p> <p>2 Q A lawyer?</p> <p>3 A No.</p> <p>4 Q Robert Armstrong, he was a doctor?</p> <p>5 A Yes.</p> <p>6 Q In your division?</p> <p>7 A Yes.</p> <p>8 Q And Michael Connors, who was he?</p> <p>9 A Marketing.</p> <p>10 Q Then you have Neal Matheson. Who is he?</p> <p>11 A The head of the R and D.</p> <p>12 Q So getting this email from Hopkins is the</p> <p>13 Vice-President, the head of R and D, the head</p> <p>14 lawyer, people from regulatory, the head of</p> <p>15 marketing, all interested in this issue, correct?</p> <p>16 MS. O'CONNOR: Objection to the form</p> <p>17 of the question. You can answer.</p> <p>18 A Yes.</p> <p>19 Q If we go down a little further, this</p> <p>20 starts with an email from Helen, correct? Actually</p> <p>21 it starts with an email from Lorena Telofski,</p> <p>22 correct?</p> <p>23 A Yes.</p> <p>24 Q Which is then followed by a response from</p> <p>25 from Helen, correct?</p>	<p>1 Program, right?</p> <p>2 A Correct.</p> <p>3 Q "Has not made any connections with oral</p> <p>4 ingestion of talc. Why would we want to draw to</p> <p>5 their attention." Do you see that?</p> <p>6 A Yes.</p> <p>7 Q "Two, the purpose of doing an oral study</p> <p>8 with labeled talc is to understand the kinetics of</p> <p>9 talc after oral ingestion. The data would be more</p> <p>10 important when considering the role talc plays as an</p> <p>11 excipient."</p> <p>12 A That's what it says.</p> <p>13 Q And then you asked for comments. She</p> <p>14 asked for comments, not you.</p> <p>15 A She asked.</p> <p>16 Q It is not your role to comment at this</p> <p>17 point. That fair?</p> <p>18 A That's fair.</p> <p>19 Q You are just there to figure out what to</p> <p>20 tell people once the decisions are made?</p> <p>21 MS. O'CONNOR: Objection to the form</p> <p>22 of the question.</p> <p>23 A My role is to explain best whatever</p> <p>24 the information is it to the consumer.</p> <p>25 Q And then the response comes back from John</p>

<p style="text-align: right;">Page 101</p> <p>1 Hopkins, right?</p> <p>2 A That is what looks like, yes.</p> <p>3 Q What I'm trying to understand is to start,</p> <p>4 why is Johnson and Johnson relying upon an outside</p> <p>5 consultants for some issue as important as this? Do</p> <p>6 you know?</p> <p>7 MS. O'CONNOR: Objection. Called for</p> <p>8 speculation. You can answer.</p> <p>9 A No, I don't know.</p> <p>10 Q Hopkins writes, "I would agree with</p> <p>11 Helen." What is her position again?</p> <p>12 A Toxicology.</p> <p>13 Q He is a toxicologist. "That including the</p> <p>14 results of an old oral study, may create issues that</p> <p>15 do not yet exist." Correct?</p> <p>16 A That's what it says.</p> <p>17 Q So he is saying, let's not give that to the</p> <p>18 federal government, right?</p> <p>19 MS. O'CONNOR: Objection to the</p> <p>20 characterization.</p> <p>21 A That is your interpretation.</p> <p>22 Q Well, is there was any other why to</p> <p>23 interpret it?</p> <p>24 MS. O'CONNOR: Objection.</p> <p>25 A I didn't write it.</p>	<p style="text-align: right;">Page 103</p> <p>1 Q Do you have any information that the</p> <p>2 information that Johnson and Johnson had in its</p> <p>3 possession concerning the ability of talc to reach</p> <p>4 the ovary discussed in the emails was ever</p> <p>5 communicated to the federal government?</p> <p>6 MS. O'CONNOR: Objection to the form</p> <p>7 of the question. You may answer.</p> <p>8 A I don't know that.</p> <p>9 THE VIDEOGRAPHER: The time is now</p> <p>10 12:44 p.m. We are going off the record.</p> <p>11 (Luncheon recess taken)</p> <p>12</p> <p>13</p> <p>14 THE VIDEOGRAPHER: The time is 1:34 and we</p> <p>15 are back on the video record.</p> <p>16</p> <p>17 BY MR. PLACITELLA:</p> <p>18</p> <p>19 Q I'm going to spend a few minutes,</p> <p>20 hopefully not too long, asking about specific</p> <p>21 information and whether it was shared with you.</p> <p>22 J &amp; J-8 is an April 15, 1969,</p> <p>23 J and J memo to William Ashton. Do you know who</p> <p>24 William Ashton is?</p> <p>25 A I knew of him, yes.</p>
<p style="text-align: right;">Page 102</p> <p>1 Q But you were there. Do you know what the</p> <p>2 intent was?</p> <p>3 A No.</p> <p>4 Q It says, "As far as doing a new oral study</p> <p>5 with radio label." Do you know what radio label</p> <p>6 means?</p> <p>7 A No.</p> <p>8 Q "This is not really good value for money</p> <p>9 since, although it may show that orally ingested</p> <p>10 talc can find its way to the ovary, it can raise</p> <p>11 problems that we don't have answers to."</p> <p>12 That is what is written to the</p> <p>13 Vice-President of the company, the head of</p> <p>14 toxicology and the head lawyer about what</p> <p>15 information should be provided to the federal</p> <p>16 government concerning whether talc can reach a</p> <p>17 woman's ovary, correct?</p> <p>18 MS. O'CONNOR: Objection to the form</p> <p>19 of the question. Compound, vague.</p> <p>20 A That's what it said, what you just read.</p> <p>21 Q Am I correct that study was never done?</p> <p>22 A I don't know that.</p> <p>23 Q Well, do you have any information that</p> <p>24 that study was ever done?</p> <p>25 A No, I don't.</p>	<p style="text-align: right;">Page 104</p> <p>1 Q Did you ever meet him?</p> <p>2 A I met him once.</p> <p>3 Q The memo is from Dr. Thompson. Do you</p> <p>4 know who he was?</p> <p>5 A No.</p> <p>6 Q Did you know he was at one point the</p> <p>7 medical director at Johnson and Johnson?</p> <p>8 A The name is not familiar to me.</p> <p>9 Q The memo starts out that, "Over the years,</p> <p>10 I have reviewed literature of the hazards related to</p> <p>11 the inhalation of talc particles on several</p> <p>12 different occasions. In your memorandum you</p> <p>13 indicate Tremolite does have needle type crystals</p> <p>14 and that our position has been that these can</p> <p>15 penetrate the skin and cause irritation." Do you</p> <p>16 see that?</p> <p>17 A Yes, I see there.</p> <p>18 Q Then it goes on In the middle, next</p> <p>19 paragraph it says, "There are reports in the</p> <p>20 literature concerning talcosis, which, as you know,</p> <p>21 is a form of pneumocomiosis attributed to the talc."</p> <p>22 Then if you go down a couple more</p> <p>23 sentences, "Furthermore, we have occasionally</p> <p>24 received inquiries from various individuals,</p> <p>25 including General Johnson and several pediatricians</p>

<p style="text-align: right;">Page 105</p> <p>1 expressing concern over the possibility of the</p> <p>2 adverse effects of the lungs of babies or mothers</p> <p>3 who might inhale any substantial amounts of our talc</p> <p>4 formulations."</p> <p>5 Were you aware in as far back as 1969</p> <p>6 the doctors within Johnson and Johnson were</p> <p>7 discussing risks to babies who might inhale talc</p> <p>8 from your products?</p> <p>9 MS. O'CONNOR: Objection to the form</p> <p>10 of the question. You can answer.</p> <p>11 A I was not aware of anything written here.</p> <p>12 Q It goes down a little further and says,</p> <p>13 "Obviously, if we do include tremolite, in more than</p> <p>14 unavoidable trace amounts, this sort of negation of</p> <p>15 such inquires could no longer pertain." Do you see</p> <p>16 that?</p> <p>17 A Yes.</p> <p>18 Q When you answered the Interrogatories</p> <p>19 saying that there was no evidence of Tremolite, were</p> <p>20 you aware of this information?</p> <p>21 MS. O'CONNOR: Objection to the form</p> <p>22 of the question. You may answer.</p> <p>23 A This is the first I've seen this.</p> <p>24 Q We will go to the next page, please.</p> <p>25 Dr. Thompson further states, "Since</p>	<p style="text-align: right;">Page 107</p> <p>1 you to when you were answering Interrogatories on</p> <p>2 behalf of Johnson and Johnson?</p> <p>3 A I have never seen anything in this memo</p> <p>4 before.</p> <p>5 Q Was this document made available you to to</p> <p>6 produce for the plaintiffs in the case that you were</p> <p>7 certifying answers to Interrogatories?</p> <p>8 MS. O'CONNOR: Objection to the form.</p> <p>9 Mischaracterizes her testimony, calls for a legal</p> <p>10 conclusion. You may answer.</p> <p>11 A I don't remember seeing this.</p> <p>12 Q 399 is a document that was produced from</p> <p>13 the files of Johnson and Johnson. It is entitled</p> <p>14 Pulmonary Talcosis as a Result of Massive Aspiration</p> <p>15 of Baby Powder. Do you see that?</p> <p>16 A I see the title, yes.</p> <p>17 Q Have you ever seen this document before?</p> <p>18 A No.</p> <p>19 Q You see that it is from a study from</p> <p>20 May 1977 and in the published medical literature?</p> <p>21 A I see that date, yes.</p> <p>22 Q If you go to the next page under</p> <p>23 discussion, it says, "The major ingredients in most</p> <p>24 brands of baby powder is talc and we believe our</p> <p>25 patient had talc pneumoconiosis. This disease is</p>
<p style="text-align: right;">Page 106</p> <p>1 pulmonary disease, including inflammatory</p> <p>2 fibroplastic and neoplastic types, appear to be on</p> <p>3 the increase, it would seem to be prudent to limit</p> <p>4 any possible content of Tremolite in our powder</p> <p>5 formulations to an absolute minimum." Do you see</p> <p>6 that?</p> <p>7 A Yes.</p> <p>8 Q Were you ever told there was Tremolite in</p> <p>9 the baby powder formulation?</p> <p>10 A Not to my knowledge.</p> <p>11 Q It goes on to say a further down, "It is</p> <p>12 conceivable that a similar situation might eventually</p> <p>13 arise if it became known that our talc formulations</p> <p>14 contained any significant amount of Tremolite. Since</p> <p>15 the usage of this product is so widespread and the</p> <p>16 existence of pulmonary disease is increasing, it is</p> <p>17 not inconceivable that we could become involved in</p> <p>18 litigation in which pulmonary fibrosis and other</p> <p>19 lung changes might be, rightfully or wrongfully,</p> <p>20 attributed to the inhalation of our powder</p> <p>21 formulations. It might be that someone in the law</p> <p>22 department should be consulted with regard to the</p> <p>23 defensibility of our position in the event such a</p> <p>24 situation could ever arise."</p> <p>25 Was this information ever made known</p>	<p style="text-align: right;">Page 108</p> <p>1 encountered as an occupational hazard in mining." Do</p> <p>2 you see that?</p> <p>3 MS. O'CONNOR: Objection to the form.</p> <p>4 MR. PLACITELLA: Maybe I read it</p> <p>5 wrong.</p> <p>6 Q "As an occupational hazard in the mining</p> <p>7 and processing of talc as well as in numerous</p> <p>8 industries in which talc is used." Do you see that?</p> <p>9 A I see that, yes.</p> <p>10 Q And then if you go to the last page, it</p> <p>11 talks about a case of talc pneumoconiosis being</p> <p>12 reported by Nam and Gracey in 1972. Do you see</p> <p>13 that?</p> <p>14 A I see that, yes.</p> <p>15 Q "The patient had developed extensive</p> <p>16 talcosis as a result of liberal use of cosmetic</p> <p>17 talcum powder over a period of 20 years." Correct?</p> <p>18 MS O'CONNOR: Objection. You are</p> <p>19 reading only parts of it.</p> <p>20 Q I'll read the whole thing. "One of the</p> <p>21 most bizarre cases of talc pneumoconiosis was</p> <p>22 reported by the Nam and Gracey in 1972. Although</p> <p>23 death was from an unrelated disease, the patient had</p> <p>24 developed extensive talcosis as a result of liberal</p> <p>25 use of cosmetic talcum powder over a period of</p>



<p style="text-align: right;">Page 109</p> <p>1 twenty years." Do you see that?</p> <p>2 A I see it says that, yes.</p> <p>3 Q Now, when you were telling patients, or</p> <p>4 consumers, that Johnson and Johnson wasn't aware of</p> <p>5 any injury resulting from the use of cosmetic talcum</p> <p>6 powder, were you ever made aware of this article?</p> <p>7 MS. O'CONNOR: Objection to the form</p> <p>8 of the question.</p> <p>9 A This is the first I've seen this article,</p> <p>10 yes.</p> <p>11 Q Now, do you still have 408?</p> <p>12 A Right.</p> <p>13 Q There's a section of the Power Point</p> <p>14 entitled Disadvantages of Using Powder and Ways of</p> <p>15 Copying. I put it up on the screen. Do you see</p> <p>16 that?</p> <p>17 A I see it on the screen. I didn't get to</p> <p>18 it yet. All right.</p> <p>19 Q It says Disadvantages of Using Powder.</p> <p>20 One, dangers of powder inhalation. Two, mess,</p> <p>21 residue on floor, bathmat, dresser. Do you see</p> <p>22 that?</p> <p>23 A Yes, I see it.</p> <p>24 Q So at the time that you were interacting</p> <p>25 with consumes and the media, did the people at</p>	<p style="text-align: right;">Page 111</p> <p>1 preceding this or after this.</p> <p>2 Q I was asking what was communicated to you</p> <p>3 were you ever told that it was being discussed</p> <p>4 within Johnson and Johnson that it was dangerous for</p> <p>5 babies to be around baby powder because of the</p> <p>6 danger of inhalation?</p> <p>7 A No, because I don't believe it is</p> <p>8 dangerous to be around when it is used properly.</p> <p>9 Q We will get to that.</p> <p>10 If you go a little bit further down,</p> <p>11 there's a page entitled Insights and Implications.</p> <p>12 Do you see that? A few pages down.</p> <p>13 A Okay.</p> <p>14 Q It says, "Insights. Powder is messy to</p> <p>15 use. Let's out a cloud of dust when you put the</p> <p>16 bottle down. Goes everywhere. Can't aim it where</p> <p>17 you when you want it. Difficult to control the</p> <p>18 amount that comes out." Did I read that correctly?</p> <p>19 A That is what is written there.</p> <p>20 Q It says, "Spills when bottle is knocked</p> <p>21 over." Correct?</p> <p>22 A That's what it says here, yes.</p> <p>23 Q There was a point in time when you were</p> <p>24 actually brought into the discussion at Johnson and</p> <p>25 Johnson concerning what the risks of inhalation were</p>
<p style="text-align: right;">Page 110</p> <p>1 Johnson and Johnson tell you that they had</p> <p>2 determined that were one of the disadvantages of</p> <p>3 using Johnson's Baby Powder was the dangers of</p> <p>4 inhalation?</p> <p>5 MS. O'CONNOR: Objection to the form</p> <p>6 of the question. You may play answer it.</p> <p>7 A I don't know that's what this is saying.</p> <p>8 I don't know the purpose of this document.</p> <p>9 Q The title of the document is Baby Powder</p> <p>10 Usage and Observation Study. October, November</p> <p>11 2001. Correct?</p> <p>12 A Yes.</p> <p>13 Q That's when you were interacting with</p> <p>14 consumers and the media about Johnson's Baby Powder,</p> <p>15 correct?</p> <p>16 A That's correct.</p> <p>17 Q My question to you is were you aware that</p> <p>18 it was being discussed at that point in time inside</p> <p>19 of Johnson and Johnson that there was a danger to</p> <p>20 using baby powder because of inhalation?</p> <p>21 MS. O'CONNOR: Objection to the form</p> <p>22 of the question. Vague, ambiguous.</p> <p>23 A Again, I don't know the source of this</p> <p>24 document because it is not mine, nor was I copied on</p> <p>25 any of it. So I don't know what the discussion was</p>	<p style="text-align: right;">Page 112</p> <p>1 from using baby powder, correct?</p> <p>2 A I don't know what you are referring to,</p> <p>3 brought into the discussion.</p> <p>4 Q Did you ever have conversations with the</p> <p>5 doctors and the scientists at Johnson and Johnson</p> <p>6 concerning what the risks were to babies who inhaled</p> <p>7 Johnson's Baby Powder?</p> <p>8 A We had many conversations about the</p> <p>9 product. As I told you we took any allegations very</p> <p>10 seriously or any concerns anybody raised. There</p> <p>11 were many discussions because of that.</p> <p>12 Q Including the poisoning of babies?</p> <p>13 MS. O'CONNOR: Objection to the form</p> <p>14 of the question.</p> <p>15 A We did not poison babies.</p> <p>16 Q Did you discuss with the doctors at</p> <p>17 Johnson and Johnson that the inhalation of Johnson</p> <p>18 Baby Powder would go deep into the lungs of babies</p> <p>19 and other human beings?</p> <p>20 MS. O'CONNOR: Objection to the form</p> <p>21 of the question. You can answer.</p> <p>22 A No, we didn't have discussions that it</p> <p>23 would go deep into the lungs, no.</p> <p>24 Q I give you a document marked 393, which</p> <p>25 you look on the very last page, was produced from</p>



<p style="text-align: right;">Page 113</p> <p>1 your file.</p> <p>2 I'm referring to, if you look at the</p> <p>3 second page -- by the way, you got this document.</p> <p>4 It says you got it. Up here, front page, Nancy Musco,</p> <p>5 confidential.</p> <p>6 A It is from me on the top part.</p> <p>7 Q There's a string of emails below?</p> <p>8 A I assume I got it.</p> <p>9 Q If you go to the second page there's an</p> <p>10 email from Dr. Chase, who worked in your department.</p> <p>11 The subject is Q and A, regarding baby powder.</p> <p>12 Importance, high, sensitivity, confidential. Do you</p> <p>13 see that?</p> <p>14 A I see that, yes.</p> <p>15 Q It talks about questions being posed to</p> <p>16 the doctor. Do you see that?</p> <p>17 MS. O'CONNOR: Objection to the form</p> <p>18 of the question.</p> <p>19 A He has questions.</p> <p>20 Q Right. What is referenced is a file</p> <p>21 called, "What are the risks of inhalation?" Do you</p> <p>22 see that?</p> <p>23 A I see that, yes.</p> <p>24 Q 394 is the next in the collective Bates</p> <p>25 numbers, and the title is: What are the Risks of</p>	<p style="text-align: right;">Page 115</p> <p>1 Q Then right below it it says, "In theory,</p> <p>2 some particles could, and then there's crossed out,</p> <p>3 find their way, go lower in the pulmonary</p> <p>4 system and attach to the lower bronchial tree or</p> <p>5 even reach the alveolus." Correct?</p> <p>6 MS. O'CONNOR: Objection to the form</p> <p>7 of the question. You can answer.</p> <p>8 A That is what it says here. I don't know</p> <p>9 who wrote this or where it is came from.</p> <p>10 Q Talking about that's deep in the lung,</p> <p>11 isn't it?</p> <p>12 MS. O'CONNOR: Objection to the form.</p> <p>13 Q It doesn't get any deeper than that.</p> <p>14 MS. O'CONNOR: Same objection.</p> <p>15 A As I said, I've never seen this before and</p> <p>16 I don't know who wrote it.</p> <p>17 Q It was attached to the email you got.</p> <p>18 MS. O'CONNOR: Objection to the form.</p> <p>19 You can answer.</p> <p>20 A If you look, I'm the last one on this</p> <p>21 email chain and the I was not copied on the latter</p> <p>22 part of it.</p> <p>23 Q They have kept this from you?</p> <p>24 MS. O'CONNOR: Objection to the form.</p> <p>25 A No, I don't know that I got it. Maybe I</p>
<p style="text-align: right;">Page 114</p> <p>1 Inhalation." Do you see that?</p> <p>2 A Yes.</p> <p>3 Q Do you recall this discussion, now looking</p> <p>4 at this document?</p> <p>5 A No, I don't.</p> <p>6 Q Do you see where it talks about the risks</p> <p>7 of inhalation related to the amount of baby powder</p> <p>8 inhaled?</p> <p>9 MS. O'CONNOR: Objection to the form</p> <p>10 of the question.</p> <p>11 A I see what it says here.</p> <p>12 Q It says, "The first method of inhalation</p> <p>13 is that which occurs naturally as with the</p> <p>14 administration of any powder. Upon the</p> <p>15 administration of a minute amount of the powder will</p> <p>16 be aerosolized and may be inhaled." Do you see</p> <p>17 that?</p> <p>18 A That's what it says, yes.</p> <p>19 Q In your interface with consumers, the</p> <p>20 media, the federal government, did you ever</p> <p>21 communicate that you knew that the baby powder would</p> <p>22 be aerosolized during normal usage and inhaling?</p> <p>23 MS. O'CONNOR: Objection to the</p> <p>24 characterize of the testimony. Vague and ambiguous.</p> <p>25 A No, I don't say that.</p>	<p style="text-align: right;">Page 116</p> <p>1 did, but I don't remember.</p> <p>2 Q Did they ever communicate to you that the</p> <p>3 doctors within Johnson and Johnson were writing</p> <p>4 papers indicating that people would inhale</p> <p>5 baby powder and under normal use and theory, some of</p> <p>6 that powder would reach the lower bronchial tree and</p> <p>7 even the alveolus of the lung?</p> <p>8 MS. O'CONNOR: Objection to the form.</p> <p>9 Compound, vague, ambiguous. You may answer.</p> <p>10 A I don't know who wrote this.</p> <p>11 Q It also talks about, "Two other ways that</p> <p>12 the Johnson's Baby Powder could be inhaled,</p> <p>13 including a method of inhalation which would entail</p> <p>14 a small amount of talcum being expressed directly</p> <p>15 from the container into proximity of the know or</p> <p>16 mouth, or potentially larger amount being expressed</p> <p>17 intentionally or unintentionally and having a child</p> <p>18 play with the powder." Do you see that?</p> <p>19 A That is what it says here.</p> <p>20 Q It talks about, "That creating a deep</p> <p>21 inspiration and an inflammatory response that could</p> <p>22 theoretically lead to gas exchange issues at the</p> <p>23 level of the alveolus." Correct?</p> <p>24 A No. It talks about it leading to coughing</p> <p>25 or sneezing, which are natural measures.</p>

<p style="text-align: right;">Page 117</p> <p>1 Q It says, "Deep inspiration of a small 2 amount of talcum, as with any powder, would lead to 3 coughing or sneezing, both natural measures against 4 foreign bodies entering the respiratory tract. A 5 minute amount could be breathed more deeply is 6 unlikely to have a deleterious effect, however, 7 although theoretically, with cross outs, 8 inflammatory responses could theoretically lead to 9 gas exchange issues at the level of the alveolus." 10 Do you see that? 11 MS. O'CONNOR: Objection to the form 12 of the question. 13 A I see that it says that here, yes. 14 Q Was this information ever shared with you? 15 A This is the first I've ever seen this 16 paper. 17 Q It goes on to say there's a third way 18 inhalation occur. It says, "More severe inhalation 19 of large amounts of powder is the third process. As 20 it relates to this product, this would entail 21 removal of the top of the container and multiple 22 grams of material entering the nose and/or mouth." 23 Do you see that? 24 A Yes. That is what it says. 25 Q Was this information ever shared with you?</p>	<p style="text-align: right;">Page 119</p> <p>1 MS. O'CONNOR: Objection. 2 A I didn't say this. I can't guess what 3 David Chase meant. 4 Q It goes only to say, "Should it include 5 empirical information on levels of exposure, on 6 levels of exposure, know to be likely from the 7 normal use of the product, according to 8 instructions, and on the magnitude of those levels, 9 compared to amounts of exposure needed to induce 10 cancer or any other adverse effects in animal 11 studies." Do you see that? 12 A Yes. 13 Q "I understand that such information is 14 available and has been made available in previous 15 talc PR cases." 16 What is he talking about when he 17 says, "Previous talc PR cases?" 18 A I don't know. 19 A Was it ever communicated to you that 20 Johnson and Johnson had empirical information on 21 just how much exposure would occur from its normal 22 use of Johnson's Baby Powder? 23 MS O'CONNOR: Objection to the form. 24 You can answer. 25 A I don't know what David Chase is referring</p>
<p style="text-align: right;">Page 118</p> <p>1 A This is the first I've seen this paper. 2 Q Go back to 393, please, which attaches the 3 paper, "What are the Risks of Inhalation." 4 Now, this is from David Chase, a 5 doctor, correct? 6 A He is the PhD. 7 Q A PhD? 8 A Yes. 9 Q What he says after reviewing the paper is, 10 "This strikes me as being a fairly complete 11 analysis. I took the liberty of making a few 12 suggestions concerning wording. I also have a few 13 larger questions. Will this document be reviewed by 14 legal, for example, John O'Shaughnessy, who has had a 15 great deal of experience with talc issues over the 16 years." 17 Then he says, "Will it be reviewed by 18 external advisers with experience in talc issues." 19 What is PR advisers, do you know? 20 A Stands for public relations. 21 Q So you had external public relation 22 advisers to determine what information you can 23 provide to the public? 24 MS. O'CONNOR: Objection to the form. 25 Q Or to help determine?</p>	<p style="text-align: right;">Page 120</p> <p>1 to here. 2 Q Did they ever discuss with you this issue 3 of the magnitude of levels needed to induce cancer? 4 Was that ever communicated to you? 5 A The specifics of the tests were not 6 communicated here. This is a scientist who was 7 asking for specific information, and I don't know 8 what he is referring to. 9 Q Let me ask you this. You were in charge 10 of interacting with the public, with consumers, with 11 the media. Did this Q and A, or did this paper ever 12 see the light of day? Did you ever see it? 13 MS. O'CONNOR: Objection to the form 14 of the question. Vague, ambiguous, compound. You 15 can answer. 16 A I don't remember the specific paper, no. 17 Q Was there any information like this ever 18 provided to consumers, patients, doctors, anybody to 19 your knowledge? 20 MS. O'CONNOR: Objection. Compound, 21 vague and ambiguous. You can answer it. 22 A What do you mean, information like this? 23 Q The information that's contained in this 24 document and the attachments. Was any of this 25 information ever provided to your knowledge to any</p>

<p style="text-align: right;">Page 121</p> <p>1 doctor, media outlet or consumer?</p> <p>2 MS. O'CONNOR: Same Objection.</p> <p>3 A Information was provided telling the</p> <p>4 consumers the best way to use the product and that</p> <p>5 the product was safe.</p> <p>6 Q Maybe I wasn't clear in my question.</p> <p>7 The information concerning the</p> <p>8 dangers of inhalation and the ability of the product</p> <p>9 to get deep into the lungs, was that ever</p> <p>10 communicated to consumers, doctors or the media by</p> <p>11 you as the person who was the spokesperson for</p> <p>12 Johnson and Johnson on such issues?</p> <p>13 MS. O'CONNOR: Objection to the form</p> <p>14 of the question, compound, vague, ambiguous. You</p> <p>15 can answer.</p> <p>16 A The safety of the product and normal use</p> <p>17 was related to the consumers.</p> <p>18 Q Ma'am, that wasn't my question. My</p> <p>19 question was did you ever communicate to the</p> <p>20 consumer, a doctor or the media, the information</p> <p>21 concerning the risks of inhalation in this document</p> <p>22 we just went over?</p> <p>23 MS. O'CONNOR: Same objection, same</p> <p>24 answer.</p> <p>25 A I would have to answer the same way. What</p>	<p style="text-align: right;">Page 123</p> <p>1 asked you specifically, it is a simple yes or no</p> <p>2 answer. Did you provide the information to any</p> <p>3 doctor, to any consumer, to any media outlet that is</p> <p>4 contained in the document we went over called What</p> <p>5 are the Risks of Inhalation? Did you ever do that?</p> <p>6 MS. O'CONNOR: Same objection. Over</p> <p>7 broad, vague, ambiguous, compound. You may answer.</p> <p>8 A My answer would have to be the same. We</p> <p>9 talked about the normal use and the best what way to</p> <p>10 use the products. We didn't talk about exaggerated</p> <p>11 studies or anything like that. It was the normal</p> <p>12 use.</p> <p>13 Q The answer to my question is no, you never</p> <p>14 provided this information, correct?</p> <p>15 MS. O'CONNOR: Same objection.</p> <p>16 A We provided safety information based on</p> <p>17 the normal use.</p> <p>18 Q So the answer to my question is no, you</p> <p>19 never provided the information and the inhalation</p> <p>20 risks documents we went through, correct? You</p> <p>21 really refuse to answer the question?</p> <p>22 MS. O'CONNOR objection.</p> <p>23 Mischaracterizing --</p> <p>24 Q Let me ask you this question. You met</p> <p>25 with counsel 16 hours?</p>
<p style="text-align: right;">Page 122</p> <p>1 we talked to consumers and doctors about was the way</p> <p>2 to use the product and the safety and normal use of</p> <p>3 the product.</p> <p>4 Q Did you ever talk to doctors about the</p> <p>5 risk of inhalation and the ability of someone during</p> <p>6 normal use of Johnson's Baby Powder having that</p> <p>7 powder reach the inner parts of the lung? Did you</p> <p>8 ever have that conversation?</p> <p>9 MS. O'CONNOR: Objection to the form.</p> <p>10 Ambiguous, compound. You can answer.</p> <p>11 A We didn't feel there was any danger in</p> <p>12 normal use of the product.</p> <p>13 Q Let's just be clear and then I'll move on.</p> <p>14 None of the information that was included in the</p> <p>15 documents we just went over entitled, What are the</p> <p>16 Risks of Inhalation, was ever communicated by you to</p> <p>17 any consumer, to any doctor or to anybody else,</p> <p>18 true?</p> <p>19 MS. O'CONNOR: Objection to the form</p> <p>20 of the question. You can answer.</p> <p>21 A We relayed the safety of the product</p> <p>22 product when used as intended in normal use.</p> <p>23 Q You just refuse to answer my question?</p> <p>24 MS. O'CONNOR: Objection.</p> <p>25 Q Was that the question I asked you? I</p>	<p style="text-align: right;">Page 124</p> <p>1 MS. O'CONNOR: Again,</p> <p>2 mischaracterizing the testimony.</p> <p>3 A Not 16, 12.</p> <p>4 Q 12, and you didn't get paid for that,</p> <p>5 right?</p> <p>6 A No.</p> <p>7 Q So why did you take 12 hours of your busy</p> <p>8 lie to meet with counsel rather just come in answer</p> <p>9 the questions completely and without coaching?</p> <p>10 MS. O'CONNOR: Objection.</p> <p>11 Argumentative.</p> <p>12 A I wouldn't call it coaching.</p> <p>13 MS. O'CONNOR: Please make sure you</p> <p>14 don't discuss anything we discussed in our meetings.</p> <p>15 A I took the time without getting paid</p> <p>16 because it is something I care very deeply about.</p> <p>17 Q You wanted to help Johnson and Johnson?</p> <p>18 MS. O'CONNOR: Don't interrupt her</p> <p>19 answer, please. Continue your answer.</p> <p>20 A As I said, I care very deeply about the</p> <p>21 products. I truly believe in the sincerity of</p> <p>22 Johnson and Johnson. We are not going to go and</p> <p>23 market a product that is going to kill people that's</p> <p>24 ridiculous.</p> <p>25 I really care and I care that</p>

<p style="text-align: right;">Page 125</p> <p>1 misinformation has been given to the public. That's</p> <p>2 why I spend my time volunteering.</p> <p>3 Q You wanted to help Johnson and Johnson</p> <p>4 depends itself, right?</p> <p>5 MS. O'CONNOR: Objection.</p> <p>6 Mischaracterizes the testimony, argumentative. You</p> <p>7 can answer.</p> <p>8 A I want to make sure the right, correct</p> <p>9 information reaches consumers.</p> <p>10 Q Even if you weren't provided the right,</p> <p>11 correct information yourself, correct?</p> <p>12 MS. O'CONNOR: Objection to the form.</p> <p>13 You can answer.</p> <p>14 A As I said, I wanted to make sure the right</p> <p>15 information reaches them.</p> <p>16 Q We are going to spend some time and with</p> <p>17 your permission I'll put this deposition up on the</p> <p>18 internet and you will have your answer. How about</p> <p>19 that?</p> <p>20 MS. O'CONNOR: Wildly inappropriate,</p> <p>21 argumentative. You don't have to answer that</p> <p>22 question.</p> <p>23 Q Am I correct that Johnson and Johnson</p> <p>24 never told you that it had no idea what the exact</p> <p>25 particle size were of the baby powder in evaluating</p>	<p style="text-align: right;">Page 127</p> <p>1 yourself and a number of other people, correct?</p> <p>2 A Yes. I'm copied on this.</p> <p>3 Q The subject is talc particle size</p> <p>4 distribution. Do you see that?</p> <p>5 A That's what it says, yes.</p> <p>6 Q It starts out, there's an earlier memo</p> <p>7 dated May 21, 2009 to yourself from Charles</p> <p>8 Wajszczuk, and I'll pull it up so we are all on the</p> <p>9 same page.</p> <p>10 MS. O'CONNOR: Can we have your</p> <p>11 question?</p> <p>12 Q Charles Wajszczuk, subject talc particle</p> <p>13 size distribution, and he asks -- by the way, he is</p> <p>14 a doctor, right?</p> <p>15 A That's correct.</p> <p>16 Q He worked in your department?</p> <p>17 MS. O'CONNOR: Objection to the form.</p> <p>18 You can answer.</p> <p>19 A He worked in research and development,</p> <p>20 yes.</p> <p>21 Q He asks, "Do we have an actual size of our</p> <p>22 talc particles? Specifically how many, or what</p> <p>23 percentage in the final product are less than point</p> <p>24 one micrometer or greater than point one micrometer,</p> <p>25 but less than point one micrometer or one to five</p>
<p style="text-align: right;">Page 126</p> <p>1 how much of it can reach the lungs of babies and</p> <p>2 other human beings?</p> <p>3 MS. O'CONNOR: Objection to the form.</p> <p>4 You you may answer. Is there a question there?</p> <p>5 A Rephrase it, please.</p> <p>6 Q Sure. Am I correct that Johnson and</p> <p>7 Johnson did not know, and never studied, what the</p> <p>8 size range of particles were in Johnson's Baby</p> <p>9 Powder in order to estimate correctly just how much</p> <p>10 talc would reach the lungs of a human being?</p> <p>11 MS. O'CONNOR: Objection to the form</p> <p>12 of the question. Compound, vague and ambiguous.</p> <p>13 You may answer.</p> <p>14 A I don't know the specific study. That</p> <p>15 would have been in the field of microbiology.</p> <p>16 Q 392 starts with an email from David Chase</p> <p>17 to Mathew Noble and other people in your</p> <p>18 department, including yourself, correct?</p> <p>19 MS. O'CONNOR: Objection to the form</p> <p>20 of the question. You may answer.</p> <p>21 A It is a long thing.</p> <p>22 Q Let's get the title of the first email and</p> <p>23 then we will go backwards.</p> <p>24 May 22, 2009 from</p> <p>25 Charlie Wajszczuk to Dr. David Chase, Mathew Noble,</p>	<p style="text-align: right;">Page 128</p> <p>1 micrometers, but greater than five, but less than</p> <p>2 ten micrometers." Do you see that?</p> <p>3 A Yes.</p> <p>4 Q And in one of the responses from Katharine</p> <p>5 Martin on the page before -- who is Katherine</p> <p>6 Martin, by the way?</p> <p>7 A She was the director of research and</p> <p>8 development.</p> <p>9 Q She was head of R and D?</p> <p>10 MS. O'CONNOR: Objection.</p> <p>11 Q That's different?</p> <p>12 A One of the directors.</p> <p>13 Q She writes, "Do we have the ability to run</p> <p>14 particle size distribution internally or access this</p> <p>15 from our suppliers? We need for our powders</p> <p>16 globally, including talc and corn starch. Any</p> <p>17 thoughts." Did I read that correctly?</p> <p>18 A That's what it says.</p> <p>19 Q Before that, Charles says he needs this</p> <p>20 information vital to your argument, correct?</p> <p>21 A He says this may well be vital.</p> <p>22 Q Right. Then if you go to the very front</p> <p>23 page, Dr. Chase responds by saying he would be in</p> <p>24 favor of finding out what the particle size</p> <p>25 specifications are for cosmetic grade talc, right?</p>

<p style="text-align: right;">Page 129</p> <p>1 A That's what it says.</p> <p>2 Q Who is Mathew Noble? What was his job?</p> <p>3 A I believe he was Global R and D director.</p> <p>4 Q He was in charge of or he was a director</p> <p>5 for of R and D on a global basis?</p> <p>6 A One of them, yes.</p> <p>7 Q Who was Euen Gunn?</p> <p>8 A He was also an R and D director.</p> <p>9 Q Who was they Delores Santora?</p> <p>10 A Development person.</p> <p>11 Q When it says it has the designation JJISG</p> <p>12 for Mathew Noble, what does that stand for?</p> <p>13 A Whatever country he was from.</p> <p>14 Q He wasn't in the U.S.?</p> <p>15 A No.</p> <p>16 Q Dr. Chase writes, "He would be in favor of</p> <p>17 finding out what particle size specifications are</p> <p>18 for cosmetic grade talc." Do you see that's?</p> <p>19 A That's what it says, yes.</p> <p>20 Q As of May 22, 2009, the people on this</p> <p>21 email, they don't have any idea what the particle</p> <p>22 size is for all of the cosmetic grade talc, do they?</p> <p>23 MS. O'CONNOR: Objection to the</p> <p>24 characterization of the document. You may answer.</p> <p>25 A It appears they are asking for it.</p>	<p style="text-align: right;">Page 131</p> <p>1 any consumer?</p> <p>2 MS. O'CONNOR: Objection to the form</p> <p>3 of the question. Compound, vague, ambiguous. You</p> <p>4 may answer.</p> <p>5 A I don't see what that has to do with what</p> <p>6 a consumer's question may have been. I don't know</p> <p>7 if that was ever given. I don't know.</p> <p>8 Q How about any doctor? Certainly a doctor</p> <p>9 would want to know this, don't you think?</p> <p>10 MS. O'CONNOR: Objection to the form.</p> <p>11 A I don't know.</p> <p>12 Q Did you ever give that information to any</p> <p>13 doctors?</p> <p>14 MS. O'CONNOR: Objection.</p> <p>15 A I personally didn't, no.</p> <p>16 Q Do you have any evidence as you sit here</p> <p>17 today that this information was ever communicated by</p> <p>18 Johnson and Johnson to any doctors?</p> <p>19 MS. O'CONNOR: Objection to the form.</p> <p>20 You may answer it.</p> <p>21 A I don't know.</p> <p>22 MR. PLACITELLA: Mark this Musco-2.</p> <p>23 (The above document is marked</p> <p>24 Musco-2.)</p> <p>25</p>
<p style="text-align: right;">Page 130</p> <p>1 Q The response is, and you got a copy of</p> <p>2 this from Charles Wajszczuk, "The size does matter.</p> <p>3 As to the particle's ability to reach the alveolus.</p> <p>4 There are two issues that make bronchoscopy</p> <p>5 necessary. Mechanical obstruction or physiologic</p> <p>6 interference with blood gas exchange. The first</p> <p>7 seems to be the issue with talc. Particles</p> <p>8 accumulate and form a material blockage in the</p> <p>9 bronchial tree." Do you see that?</p> <p>10 A Yes.</p> <p>11 Q Then the next paragraph talks about the</p> <p>12 inherent bias of powder reaching the aveoli is</p> <p>13 probably what accounts for the former years have</p> <p>14 been many more bronchoscopies." Do you see that?</p> <p>15 A That's what it says, yes.</p> <p>16 Q So apparently you did know that Johnson's</p> <p>17 Baby Powder had the ability to reach deep into the</p> <p>18 lungs, didn't you?</p> <p>19 MS. O'CONNOR: Objection to the form</p> <p>20 of the question. You may answer.</p> <p>21 A I don't remember this.</p> <p>22 Q Was any of this information that you don't</p> <p>23 really know as of 2009, what has size of the</p> <p>24 particles were inside the can of Johnson's Baby</p> <p>25 Powder? Was that information ever communicated to</p>	<p style="text-align: right;">Page 132</p> <p>1 Q I'm not going to do all of that. That's</p> <p>2 the good news.</p> <p>3 I'm going to tell you what that is.</p> <p>4 Those are all the tests that I marked at a</p> <p>5 deposition of John Hopkins when he was testifying on</p> <p>6 behalf of Johnson and Johnson about whether or not</p> <p>7 there was asbestos ever found in Johnson's Baby</p> <p>8 Powder or the mines that the baby powder came from.</p> <p>9 I want you to just quickly glance through that.</p> <p>10 Tell me whether you have ever seen</p> <p>11 any of those tests.</p> <p>12 A That's a lot of tests.</p> <p>13 Q You can flip through them. I'm assuming</p> <p>14 the answer is no, because you told me you saw</p> <p>15 nothing else.</p> <p>16 A I don't want to flip through anything. I</p> <p>17 wouldn't have seen tests. It would not be anything</p> <p>18 I would deal with.</p> <p>19 Q When you answered the Interrogatories</p> <p>20 under oath in the Krushinski case, do you have any</p> <p>21 evidence that you turned any of what's in there over</p> <p>22 to the plaintiff's lawyers?</p> <p>23 MS. O'CONNOR: Objection to the form of</p> <p>24 the question. That is not what she attested to.</p> <p>25 Calls for a legal conclusion. You may answer.</p>



<p style="text-align: right;">Page 133</p> <p>1 A What I provided was input into information 2 that was on those pages, and anything that was given 3 to the lawyers would have been between the lawyers. 4 Q You never saw physically any of the 5 testing documents, so as you sit here today, you 6 can't really testify under oath that there were no 7 testing documents showing there was asbestos in 8 Johnson's Baby Powder or the mines from which it 9 came, because you never looked at the documents 10 yourself, correct? 11 MS. O'CONNOR: Objection, vague, 12 ambiguous compound. You can answer. 13 A My job was not to look at and review the 14 study. I was part of a team. I relied on that team 15 for the expertise of that team. Just like a nurse 16 taking care of my patients. I am not privy to 17 everything about them, but I'm the communicator. 18 Q I understand that, Ma'am, but you actually 19 certified under oath about what information was 20 available and I didn't see anything in the 21 Interrogatories that you certified about any tests 22 showing that was asbestos in either Johnson's Baby 23 Powder at any point in time, or in any of the mines 24 that were used to supply that powder. Do you agree 25 with me?</p>	<p style="text-align: right;">Page 135</p> <p>1 testing showing asbestos in the mines, would that 2 have been appropriate information to supply in the 3 Interrogatory answers that you certified as true and 4 accurate? 5 MS. O'CONNOR: Objection to the form 6 of the question. Vague, ambiguous, mischaracterizes 7 the testimony 8 A Again, what was provided was answers to 9 those questions as determined by legal counsel. 10 Q So your role was just to sign it without 11 ever reviewing anything, just relying on whatever 12 the lawyers told you? 13 MS. O'CONNOR: Objection, 14 argumentative. 15 Q Right? That's what happened here? 16 MS. O'CONNOR: I don't know how many 17 times you are going to mischaracterize documents. 18 A I was the point person. I provided the 19 names or departments of the correct people who could 20 give the information and the final say of that was a 21 legal matter. 22 Q But you did nothing other than to talk to 23 the lawyers to verify whether the information you 24 supplied in Interrogatories was the truth and the 25 whole truth, correct?</p>
<p style="text-align: right;">Page 134</p> <p>1 MS. O'CONNOR: Objection to the form. 2 Compound, vague, ambiguous, calls for a Legal 3 conclusion. You can answer. 4 A What I answered were the direct questions 5 asked. Any testing provided, again, was from the 6 lawyers. 7 Q So the lawyers made the determination as 8 to what was going to be communicated and what was 9 not going to be communicated. It was not you. Is 10 that fair? 11 MS. O'CONNOR: Objection to the form 12 of the answer. 13 A Since it was a legal matter, they were the 14 appropriate person to make the final decisions. 15 Q If there was information that was 16 withheld, that was done by the lawyers, not you? 17 MS. O'CONNOR: Objection to the form 18 of the question. Vague, ambiguous calls for 19 speculation. You may answer. 20 A The appropriate information was given. 21 Q What do you mean by that? 22 A It was what was determined appropriate for 23 the particular question. 24 Q Was it appropriate if you had information 25 in your possession showing that there was asbestos</p>	<p style="text-align: right;">Page 136</p> <p>1 MS. O'CONNOR: Objection to the form. 2 Argumentative, calls for speculation. You can 3 answer. 4 A No, what I did is to make sure the 5 correct people were provided the appropriate 6 information. 7 Q You never verified that information 8 yourself, correct? 9 A That was not my job. 10 Q That was not your job? 11 MS. O'CONNOR: Objection. 12 MR. PLACITELLA: Mark this Musco-3. 13 (The above document is marked 14 Musco-3.) 15 16 Q You have in front of you a that was marked 17 at Dr. Hopkins's deposition that was created during 18 his deposition, which we have now marked as Musco-3. 19 I ask you to take a look at that. You have never 20 seen this chart before, correct? 21 A No. 22 Q Although you spent somewhere around twelve 23 hours with the lawyers preparing for this 24 deposition, they never shared this chart with you, 25 correct?</p>



<p style="text-align: right;">Page 137</p> <p>1 A This is the first I've seen it.</p> <p>2 Q As you will see the chart goes in</p> <p>3 chronological order.</p> <p>4 A It starts in 1967. It seems to be, yes.</p> <p>5 Q We can put it up on the screen and do it</p> <p>6 easier.</p> <p>7 This chart, as you see, has the date,</p> <p>8 the testing entity, the author, the purpose, the</p> <p>9 method, the mine, what was tested, the precautions</p> <p>10 and what the tests revealed. Do you see that?</p> <p>11 A Yes.</p> <p>12 Q No one ever shared with you the tests from</p> <p>13 1971 done by Johnson and Johnson on baby powder</p> <p>14 production where the revelation was Tremolite and</p> <p>15 Actinolite, correct? That was never shared with</p> <p>16 you?</p> <p>17 MS. O'CONNOR: Objection to the form.</p> <p>18 You can answer.</p> <p>19 A No.</p> <p>20 Q No one ever shared with you the test from</p> <p>21 1971 done by McCrone. McCrone is one of the</p> <p>22 companies you actually list in the Answers to</p> <p>23 Interrogatories you signed, correct?</p> <p>24 A I remember that name was there.</p> <p>25 Q They did a test of Shower to Shower and</p>	<p style="text-align: right;">Page 139</p> <p>1 MS. O'CONNOR: Objection to the form</p> <p>2 of the question.</p> <p>3 A I'm not familiar with this. I didn't read</p> <p>4 the exact testing. This the first I've seen it.</p> <p>5 Q Here is my issue. You are looking into</p> <p>6 the camera saying you believe everything was done</p> <p>7 right and you say that, but you haven't seen any of</p> <p>8 the tests on this chart to make that evaluation for</p> <p>9 yourself, right?</p> <p>10 MS. O'CONNOR: Objection to the form.</p> <p>11 Argumentative, vague, ambiguous. You can answer.</p> <p>12 A My role was not to read or assess the</p> <p>13 studies done.</p> <p>14 Q How about the test that was done by</p> <p>15 Johnson and Johnson on Johnson's Baby Powder in 1973</p> <p>16 that showed Tremolite or Actinolite. You haven't</p> <p>17 seen there either, right?</p> <p>18 A Again, my role was not to look at the</p> <p>19 tests.</p> <p>20 Q And you never saw the tests on baby powder</p> <p>21 from 4-27-73, correct?</p> <p>22 A No.</p> <p>23 Q You never saw the test on Shower to Shower</p> <p>24 done by the FDA in September 1973, correct?</p> <p>25 MS. O'CONNOR: Objection to the form.</p>
<p style="text-align: right;">Page 138</p> <p>1 found traces of chrysotile in one of the additives.</p> <p>2 That was never shared with you, correct?</p> <p>3 A This is the first I've seen it.</p> <p>4 Q Did you ever see a test from August 1972</p> <p>5 done by Johnson and Johnson of Shower to Shower</p> <p>6 finding about one fiber rod or needle for every 500</p> <p>7 particles, approximately one-third being Tremolite.</p> <p>8 Have you seen that?</p> <p>9 MS. O'CONNOR: Objection to the form.</p> <p>10 You can answer.</p> <p>11 A I've not seen it, no.</p> <p>12 Q Did you ever see a test from 1972 done by</p> <p>13 Sperry Rand on Shower to Shower where the document</p> <p>14 indicated asbestos fibers could be detected in the</p> <p>15 sample report on chrysotile. Did you ever see that?</p> <p>16 MS. O'CONNOR: Objection to the form.</p> <p>17 A No.</p> <p>18 Q How about 10-27-72, done by McCrone of</p> <p>19 Johnson Baby Powder batch saying both samples</p> <p>20 containing insignificant amount of Tremolite. Do</p> <p>21 you see that?</p> <p>22 A No, I didn't see anything about</p> <p>23 insignificant amount.</p> <p>24 Q Your interrogatory answers say there was</p> <p>25 never tremolite, right?</p>	<p style="text-align: right;">Page 140</p> <p>1 You may answer.</p> <p>2 A No, I did not.</p> <p>3 Q Is it fair to say you want to look at it</p> <p>4 again, that you have never seen any of the tests set</p> <p>5 forth on this spreadsheet that was created with the</p> <p>6 assistance of Johnson and Johnson's corporate</p> <p>7 representative under oath?</p> <p>8 MS. O'CONNOR: Objection to the form.</p> <p>9 You may answer.</p> <p>10 A I would not have seen this.</p> <p>11 Q Open the book to the number 19. Do you</p> <p>12 have it in front of you?</p> <p>13 A Which one are you specifically referring</p> <p>14 to?</p> <p>15 Q I put it up there a July 29, 1971, memo</p> <p>16 from Nashed to Mr. Foster on Johnson and Johnson</p> <p>17 letterhead. Do you see that?</p> <p>18 A Yes, I do.</p> <p>19 Q It states the talc used in Johnson's Baby</p> <p>20 Powder is obtained from a selected mine in Vermont</p> <p>21 where the ore consists of mainly of platy talc with</p> <p>22 only trace amounts of fibrous minerals, that's</p> <p>23 Tremolite slash actinolite, do you see that?</p> <p>24 A That's what it says, yes.</p> <p>25 Q When you swore under oath in the</p>

<p style="text-align: right;">Page 141</p> <p>1 interrogatory answers that tremolite was never found 2 in the mines or sources form Johnson's Baby Powder, 3 this information was never shared with you, correct? 4 MS. O'CONNOR: Objection to the form 5 of the question. Misstates her testimony 6 and the document. You may answer. 7 A As I explained earlier, my role was not to 8 assess the results of studies. My role was to 9 communicate and I worked with all the experts and 10 provided the information to the consumers they told 11 me. 12 Q Whatever they told you. So the 13 information you provided was only as good as what 14 they told you, correct? 15 MS. O'CONNOR: Objection to the 16 form. 17 A No. I trusted the experts I worked with 18 through the years. That's one thing I always 19 valued. 20 Q When you swore under oath under penalty of 21 perjury that tremolite was never found in any of the 22 sources for Johnson's Baby Powder, was the 23 information in the documents in front of you ever 24 conveyed to you? 25 MS. O'CONNOR: Objection to the form.</p>	<p style="text-align: right;">Page 143</p> <p>1 worked for Rutgers and was paid by Johnson and 2 Johnson? 3 A I don't know the name. 4 Q Do you know that she worked as a 5 consultant to Johnson and Johnson to assist them in 6 litigation? 7 A I never hear the name. 8 MS. O'CONNOR: Objection to the form. 9 Q Do you know that she told Johnson and 10 Johnson before you ever swore under oath that there 11 was no evidence of asbestos in Johnson's Baby 12 Powder, that she actually tested the baby powder and 13 found asbestos. Did you know that? 14 A Could you rephrase the question? 15 Q Sure look at 220. This is a letter from 16 Alice Blount, mineralogist, to the lawyers for 17 Johnson and Johnson dated April 23, 1998. Do you 18 see that? 19 A That is what it says her, yes. 20 Q In here she talks about the studies she 21 did on Johnson and Johnson's Baby Powder, correct? 22 A I have to read it. 23 Q Sure. Take your time. Dr. Blount says, 24 "Although my papers report an improved method for 25 analysis, the determination for the samples labeled</p>
<p style="text-align: right;">Page 142</p> <p>1 You may answer. 2 A This the first I've seen this. 3 Q Look at tab 26. It is all in there. We 4 can just go by those and make your life easier. 5 26 is a memo from the desk of Mr. 6 Nashed. Do you know who he was? 7 A No. 8 Q Do you know who Dr. Gowdy was? 9 A No. 10 Q Do you see where it talks about trace 11 amounts of the tremolite being found and that this 12 was nothing new in that it was found by both 13 McCrone and Bill Ashton? 14 A Yes, I see that. The levels are extremely 15 low. 16 Q This information was not provided to you 17 when you swore under oath in interrogatory answers 18 that tremolite was never found in any of the sources 19 for Johnson's Baby Powder, correct? 20 MS. O'CONNOR: Objection 21 Mischaracterization. You may answer. 22 A This is the first I've seen it. 23 Q Do you know who Alice Blount is? 24 A No. 25 Q Do you know she was a geologist that</p>	<p style="text-align: right;">Page 144</p> <p>1 I, Johnson and Johnson Vermont Talc, have been done 2 by the traditional methods as well." 3 Then she goes on to say, "as I told 4 you, I believe that Johnson and Johnson's Vermont 5 talc contains trace amounts of asbestos which are 6 well below those specified by OSHA." Do you see 7 that? 8 A Yes. 9 Q First time you ever heard this? 10 MS. O'CONNOR: Objection to the form. 11 You can answer. 12 A This is the first I've seen it. 13 Q 218 is a March 16, 1998 letter to John 14 O'Shaughnessy, correct? 15 A Yes. 16 Q John O'Shaughnessey is the same lawyer that 17 was copied on all these emails we went through this 18 morning, right? 19 A His name was on a lot of them, yes. 20 Q And he knew when you were answering 21 Interrogatories in the crush case. He was part of 22 that process, correct? 23 A To the best of my knowledge, he was the 24 lawyer, yes. 25 Q And this letter is written by one of the</p>

<p style="text-align: right;">Page 145</p> <p>1 lawyers at Mahaffey and Weber to Mr. O'Shaughnessy 2 concerning the company's Coker case. Do you see 3 that? 4 A I would have to read all this. 5 Q It is important so why don't you take a 6 second and look at it. 7 Bates number on that last page 64591 8 and 65492. Now, this letter to Mr O'Shaughnessy 9 states that the lawyers spoke with Alice Blount and 10 the possibility of retaining her as an expert. Do 11 you see that? 12 A Yes. 13 Q She is a geologist and mineralogist who 14 has written extensively on talc and asbestos 15 contamination in commercial talc preparations, 16 correct? 17 A That's what it says yes. 18 Q She was a former professor at Rutgers, 19 right? 20 A That's what it says. 21 Q The next page says she was actually a 22 consultant to Johnson and Johnson, right? 23 A Yes. That's what it says. 24 Q She said, what they state is, although dr. 25 Blount seemed less than ecstatic about the idea of</p>	<p style="text-align: right;">Page 147</p> <p>1 This document is absolutely 2 inconsistent with that representation, is it not? 3 MS. O'CONNOR: Objection to the form. 4 Argumentative, vague, ambiguous. You can answer. 5 A This is the first I heard of this Dr. 6 Blount. First I've seen this, so I can't comment on 7 it. 8 Q If you had this information in your 9 possession, would you have signed sworn Answers to 10 Interrogatories under oath saying that there is no 11 evidence? 12 MS. O'CONNOR: Objection to the form 13 of the question. You are mischaracterizing a 14 document she signed. 15 Q Let me ask you this. Would you have told 16 patients, doctors, the media outlet, that there is 17 no evidence whatsoever that Johnson's Baby Powder 18 contained any amounts of asbestos and there never 19 was and there never will be, if this information was 20 you provided to you? 21 MS. O'CONNOR: Objection to the form. 22 You can answer. 23 A I think it is important to read everything 24 that it said here and not to take things out of 25 context so that the consumer has the information.</p>
<p style="text-align: right;">Page 146</p> <p>1 testifying in a legal proceeding, she agreed to 2 consult in the case if we desired her to do so. But 3 stated that, "In her opinion, commercial talcum 4 powder preparations, including Johnson and Johnson's 5 Baby Powder, contain trace amounts of asbestos." Did 6 I read that correctly? 7 A That's what it says here, correct. 8 Q That's the first time you ever heard that? 9 MS. O'CONNOR: Objection to the form. 10 A I've never seen this before. 11 Q When you swore under oath in the crush 12 case that there was no evidence of asbestos in the 13 Johnson Baby Powder, no one gave you this document 14 or told you anything about Alice Blount, correct? 15 MS. O'CONNOR: Objection to the form 16 of the question. You may answer. 17 A This is the first I've hear of her, but 18 when you go on to read, she talks about it being a 19 well below limits. 20 Q Yes, Ma'am, but what you stated, and I 21 have it here this is what you told everybody from 22 1981 until the day you left, there is no evidence 23 that Johnson's Baby Powder contained any amounts of 24 asbestos and that there never was and there never 25 will be.</p>	<p style="text-align: right;">Page 148</p> <p>1 Q But you never told consumers about any of 2 this, right? 3 MS. O'CONNOR: Objection to the form. 4 A As I stated earlier, this the first I've 5 hear of this woman and the first I've seen it, so i 6 can't comment. 7 Q Is it shocking to you? 8 MS. O'CONNOR: Objection to the form. 9 Vague, ambiguous. 10 A No. 11 Q It is not shocking to you that you sat 12 with the lawyer for twelve hours in preparation for 13 this deposition and they had this information in 14 their possession, along with everything in that book 15 and they never showed it to you and they let you 16 come in here and testify? That's not shocking to 17 you? 18 MS. O'CONNOR: Objection to the form. 19 Argumentative, inappropriate. 20 Q It is not shocking to you? 21 A It doesn't shock me, no. 22 Q Now, at some point in time you actually 23 took control and possession of all of the toxicology 24 files related to talc in Johnson's Baby Powder, 25 didn't you?</p>

<p style="text-align: right;">Page 149</p> <p>1 A No. That belonged with the toxicology 2 department. 3 MS. O'CONNOR: Wait for a question. 4 Q Did you ever review the toxicology file 5 related to talc in Johnson's Baby Powder? 6 A No, I did not. 7 Q Who is Steve Mann? 8 A One of the toxicologists. 9 Q Who is Rachel Grossman? 10 A One of the medical directors. 11 Q Medical directors of who? 12 A Medical director of Johnson and Johnson 13 Consumer Products. 14 Q Let me show you 390. 390 is a January 7, 15 2002 email from Stephen Mann that mentions you, 16 correct? 17 A My name is here, yes. 18 Q And the first email in the string is from 19 you, correct? January 2, 2002. 20 A Yes. 21 Q You sent that email to the medical 22 director and one of the head toxicologists at 23 Johnson and Johnson, correct? 24 A Yes One of the toxicologists, yes. 25 Q And you write, "Steve, Mike Chudkowski</p>	<p style="text-align: right;">Page 151</p> <p>1 they related to the toxicology of talc and corn 2 starch? Did you disclose any of these files? 3 MS. O'CONNOR: Objection to the form. 4 Mischaracterizes the document. Vague, ambiguous. 5 A No. As I stated earlier, I didn't 6 physically handle the studies. 7 Q Although you were the point person that's 8 what you told us, so all those when you were the 9 point person, none of this information was 10 ultimately turned over in the crush case, was it? 11 MS. O'CONNOR; Objection to the form. 12 Calls for speculation. 13 A No, I didn't say that. The point person 14 was ensuring that the correct and appropriate person 15 was answering the questions. 16 Q To your knowledge this information was 17 never identified by you and turned over in the Krushinski 18 case, correct? 19 MS. O'CONNOR: Objection to the form. 20 A As I said, I didn't handle any copies of 21 studies or anything. 22 Q The follow up email says that the boxes 23 were taken from you and placed near Paul Sterchele. 24 Who is Paul Sterchele? 25 A A toxicologist.</p>
<p style="text-align: right;">Page 150</p> <p>1 left all of the talc corn starch slash CPSC files." 2 What does that mean? 3 A Consumer Products. I'm not sure of the 4 other. 5 Q "In my office when he retired. These 6 approximately five boxes, all seem to be full of 7 toxicology data." Do you see that? 8 A I do. 9 Q How did you know they were full of 10 toxicology data? 11 A They seemed to be full. 12 Q Did you look in the boxes? 13 A I looked in the boxes. I don't remember 14 doing this, but I'm sure I gave it a cursory look. 15 Q Once you had this information in your 16 possession, did you ever actually look at it before 17 you continued to tell consumers, doctors, media 18 people that Johnson's Baby Powder is perfectly safe? 19 MS. O'CONNOR: Objection to the form. 20 Compound, vague and ambiguous 21 A I don't remember. These were apparently 22 kept in my office and I passed them on to 23 toxicology. 24 Q Did you disclose any of these files when 25 you were the point person in the crush case, since</p>	<p style="text-align: right;">Page 152</p> <p>1 Q And Mann says that he also has five 2 binders that Mike Chudkowski left that are in his 3 office, correct? 4 A That's what it says. 5 Q And were those binders ever turned over in 6 the course of litigation up to this point? 7 MS. O'CONNOR: Objection to the form. 8 Calls for speculation, calls for a legal conclusion, 9 ambiguous, vague. 10 A I don't know what specifically was given 11 lawyer to lawyer. 12 Q Did you ever identify, as the point 13 person, binders related to talc that were in Mike 14 Chudkowski's office when you were responding to 15 helping to respond to discovery in the talc related 16 lawsuits? 17 MS. O'CONNOR: Again, mischaracterizes 18 the testimony. 19 MR. PLACITELLA: I'm asking a 20 question. I'm not mischaracterizing. 21 MS. O'CONNOR: You are. You are 22 building into your question a characterization of 23 her testimony that she told you she wasn't. But you 24 can continue to do it and I'll continue to object. 25 Q Let me ask the question differently. I</p>

<p style="text-align: right;">Page 153</p> <p>1 don't want your lawyer to get mad at me.</p> <p>2 Q Before when you were answering discovery</p> <p>3 responses, and swearing under oath as to the</p> <p>4 accuracy of those responses, were you aware of the</p> <p>5 binders referenced in this email?</p> <p>6 MS. O'CONNOR: Objection to the form.</p> <p>7 Vague, ambiguous, compound. You can answer.</p> <p>8 A I can't remember whether I was aware of</p> <p>9 them. They were certainly toxicology information.</p> <p>10 It is up to the toxicologist. I don't know that I</p> <p>11 knew they had it or not.</p> <p>12 Q Were you aware that there was a whole file</p> <p>13 on five boxes of toxicology information at the time</p> <p>14 you swore under oath in the Krushinski case?</p> <p>15 MS.O'CONNOR: Objection to the form.</p> <p>16 You may answer it.</p> <p>17 A I don't know that I knew there were five</p> <p>18 boxes or ten boxes. I knew every department had</p> <p>19 information.</p> <p>20 Q Do you know what ultimately happened to</p> <p>21 this information, these boxes and the binders?</p> <p>22 A They are in the toxicology department.</p> <p>23 Q That's where you would expect them to be?</p> <p>24 A If they were toxicology reports, yes.</p> <p>25 Q Because by this time there was definitely</p>	<p style="text-align: right;">Page 155</p> <p>1 part of your responsibility never to misrepresent to</p> <p>2 the public who you were and who you worked for?</p> <p>3 MS. O'CONNOR: Objection to the form</p> <p>4 of the question. You can answer.</p> <p>5 A Could you rephrase that?</p> <p>6 Q In other words, when you were talking to</p> <p>7 the public or to the media, you would not</p> <p>8 misrepresent who you were and who you worked for,</p> <p>9 correct?</p> <p>10 MS. O'CONNOR: Objection to the form.</p> <p>11 You can answer.</p> <p>12 A When I spoke to the consumers I identified</p> <p>13 myself and the same thing with the media, yes.</p> <p>14 Q It would be contrary to the business</p> <p>15 ethics followed by Johnson and Johnson for you to</p> <p>16 misrepresent yourself to the media in terms of who</p> <p>17 you were, correct?</p> <p>18 MS. O'CONNOR: Objection to the form</p> <p>19 of the question, you can answer.</p> <p>20 A Whenever there was a media question, I</p> <p>21 would identify myself, yes.</p> <p>22 Q So when you were dealing with the issue of</p> <p>23 asbestos in the Johnson and Johnson talc, why would</p> <p>24 you misrepresent yourself to radio stations as to</p> <p>25 whether or not you worked for Johnson and Johnson?</p>
<p style="text-align: right;">Page 154</p> <p>1 a litigation hold and they weren't allowed to get</p> <p>2 rid of them, right?</p> <p>3 MS. O'CONNOR: Objection to the form.</p> <p>4 Calls for a legal conclusion. You can answer.</p> <p>5 A I don't know if there was a hold at this</p> <p>6 time or not.</p> <p>7 MS. O'CONNOR: I need to interpose an</p> <p>8 objection on exhibit 218 and request you not</p> <p>9 question the witness further about this document. I</p> <p>10 think this is privileged.</p> <p>11 MR. PLACITELLA: It has never been</p> <p>12 used in a trial?</p> <p>13 MS. O'CONNOR: I don't know if this</p> <p>14 version has. I need to check on this.</p> <p>15 MR. PLACITELLA: I won't ask anymore</p> <p>16 questions then. I don't want to get myself in</p> <p>17 trouble or anybody else.</p> <p>18 THE VIDEOGRAPHER: The is now 2:52</p> <p>19 p m. and we are going off the record.</p> <p>20</p> <p>21 THE VIDEOGRAPHER: The time is 3:06</p> <p>22 and we are back on the video record.</p> <p>23</p> <p>24 Q As the spokesperson for Johnson and</p> <p>25 Johnson related to products, baby powder, was it</p>	<p style="text-align: right;">Page 156</p> <p>1 Why would you do that?</p> <p>2 MS. O'CONNOR: Objection to the form</p> <p>3 of the question. You can answer.</p> <p>4 A I don't remember that I did.</p> <p>5 Q That would have been totally wrong to do,</p> <p>6 right?</p> <p>7 MS. O'CONNOR: Objection to the form.</p> <p>8 You can answer.</p> <p>9 A I don't know what you mean by misrepresent</p> <p>10 myself.</p> <p>11 Q You told them you were a consumer and you</p> <p>12 were trying to find out information from them. Not</p> <p>13 telling them you worked for Johnson and Johnson,</p> <p>14 would be a mission representation about who you were</p> <p>15 and who you worked for, correct?</p> <p>16 MS. O'CONNOR: Objection to the</p> <p>17 form. Vague, ambiguous. You can answer.</p> <p>18</p> <p>19 A Well, I am a consumer.</p> <p>20 Q But as part of the business ethics of</p> <p>21 Johnson and Johnson, when you are out there working</p> <p>22 for Johnson and Johnson, you are supposed to</p> <p>23 identify yourself as the spokesperson for Johnson</p> <p>24 and Johnson. You are not supposed to mislead</p> <p>25 anyone, correct?</p>



<p style="text-align: right;">Page 157</p> <p>1 MS. O'CONNOR: Objection to the form.</p> <p>2 Compound, vague, ambiguous. You can answer.</p> <p>3 A Would you reask that again? There's a lot</p> <p>4 in there.</p> <p>5 Q This memo we marked before, 358, that you</p> <p>6 sent to everybody in the company on January 2, 1986,</p> <p>7 about your conversations and your reassurance that</p> <p>8 Johnson's Baby Powder doesn't contain asbestos.</p> <p>9 A Which document?</p> <p>10 Q 358. I put it up there. Do you remember</p> <p>11 this?</p> <p>12 A Yes.</p> <p>13 Q You told everybody at Johnson and Johnson</p> <p>14 that you called the radio station and identified</p> <p>15 yourself as a consumer and asked information</p> <p>16 whatever they had on the dangers of baby powder?</p> <p>17 MS. O'CONNOR: Objection to the form</p> <p>18 of the question. You can answer.</p> <p>19 A Yes, that's what it says.</p> <p>20 Q You told that to everybody on the list?</p> <p>21 A The distribution list was, yes.</p> <p>22 Q You never identified yourself as being</p> <p>23 from Johnson and Johnson, correct?</p> <p>24 A That's what I said.</p> <p>25 Q Who is Todd True?</p>	<p style="text-align: right;">Page 159</p> <p>1 A I don't remember her name.</p> <p>2 Q It says CPCUS, that means she worked</p> <p>3 within the same division you did, right?</p> <p>4 A Means she worked for consumer products.</p> <p>5 Q That's what you worked for?</p> <p>6 A Yes. There were a lot of people.</p> <p>7 Q What about Frederick Tewell, T E W E L L?</p> <p>8 A I don't remember that name.</p> <p>9 Q Here Todd True writes to Frederick Tewell</p> <p>10 and a copy goes to Christina Geist who is part of</p> <p>11 the global strategic design office for Johnson and</p> <p>12 Johnson, correct?</p> <p>13 A That's what her signature says.</p> <p>14 Q And what True says is, "The reality that</p> <p>15 talc is unsafe for use on slash around babies is</p> <p>16 disturbing. I don't mind selling talc. I just</p> <p>17 don't think we can continue to call it baby powder</p> <p>18 and keep it in the baby aisle. Have we done any</p> <p>19 research to determine the potential negative impact</p> <p>20 to our brand or best for babies strategy by</p> <p>21 maintaining this ingredient. Have we looked at</p> <p>22 replacing talc with cornstarch for our base powder,</p> <p>23 as other brands have? What is the value in</p> <p>24 maintaining talc under baby while our competitors</p> <p>25 have moved away?"</p>
<p style="text-align: right;">Page 158</p> <p>1 A I think he was packaging, but I'm not</p> <p>2 sure. I remember the name.</p> <p>3 Q Did you have any dealings with him?</p> <p>4 A The name is familiar, but I cannot say</p> <p>5 specifically what he did.</p> <p>6 Q Do you know what his job was in packaging?</p> <p>7 A No. That's what I mean. I remember the</p> <p>8 name, but I'm not really sure what he did.</p> <p>9 Q He had a much different perspective on</p> <p>10 whether you should be selling baby powder for use on</p> <p>11 babies than you did. Am I correct?</p> <p>12 MS. O'CONNOR: Objection to the form.</p> <p>13 A Again, I remember the name, but I don't</p> <p>14 remember him or anything about him.</p> <p>15 Q Did you ever know that while you were</p> <p>16 working at Johnson and Johnson there was this raging</p> <p>17 internal debate about whether you should be selling</p> <p>18 baby powder at all to babies?</p> <p>19 MS. O'CONNOR: Objection to the form.</p> <p>20 Q For use on babies. Obviously, babies</p> <p>21 aren't buying it.</p> <p>22 A There was no raging debate.</p> <p>23 Q 382. I think we talked about this before.</p> <p>24 This is a memo involving Christina Geist and she</p> <p>25 worked in your department, right?</p>	<p style="text-align: right;">Page 160</p> <p>1 You weren't aware of this debate</p> <p>2 going on within Johnson and Johnson while you were</p> <p>3 talking about how safe baby powder was?</p> <p>4 MS. O'CONNOR: Objection to the form</p> <p>5 of the question. You can answer.</p> <p>6 A I was not aware of this conversation with</p> <p>7 these people, no.</p> <p>8 Q 383 is an April 18, 2008 email from Todd</p> <p>9 True, subject, powder, to Fred Kobema, who in a</p> <p>10 somebody who worked in your division, correct?</p> <p>11 A I believe he worked in quality assurance.</p> <p>12 Q He says, "Todd, I can give you the powder</p> <p>13 background that I know. Lorena Telofski in R and D</p> <p>14 or Michael are the best Johnson historians. But</p> <p>15 Tammy would be the best person to address the</p> <p>16 questions that you pose." Do you know who Tammy is?</p> <p>17 A No.</p> <p>18 Q He states that, "My understanding is that</p> <p>19 we introduced the cornstarch variant as an</p> <p>20 alternate for talc for use on babies due to the talc</p> <p>21 issue and some and doctors recommending for moms</p> <p>22 not to use powder on their babies, we don't promote</p> <p>23 powder to moms." Is that true?</p> <p>24 MS. O'CONNOR: Objection to the form.</p> <p>25 You can answer.</p>



<p style="text-align: right;">Page 161</p> <p>1 A No, and I don't know -- Fred wrote this. 2 I don't know where that came from. 3 Q Do you know what he is talking about, the 4 talc issue and doctors recommending to moms not to 5 use it? Were you aware of that as a somebody 6 actually in charge of responding to these kind of 7 inquiries? 8 A Yes. I was aware some physicians feel 9 that way, yes. 10 Q Did you know that inside Johnson and 11 Johnson the discussion was that the talc was not 12 being sold to mothers? 13 MS. O'CONNOR: Objection. You can 14 answer. Vague and ambiguous. 15 A These are just the words that Fred says. 16 Not being it is widespread. 17 Q Is there any reason to disbelieve or do 18 you have any issues with the voracity with which he 19 speaks on a regular basis? He must have gotten it 20 from somewhere the idea that because of the talc 21 issue, you weren't marketing baby powder for use on 22 babes, right? Where did he get that from? 23 A Well, it is not true, so I don't know what 24 made him say this. I can't speculate on this. 25 Q Now we have two people that disagree with</p>	<p style="text-align: right;">Page 163</p> <p>1 rid of talc. 2 Q Who is Christopher Hacker? 3 A Again, I remember the name, but I don't 4 remember specifically what his department or 5 responsibilities were. 6 Q What about Michael Rosolowsky? Did we go 7 over that one? 8 A Mike was market research. 9 Q I have up here on the screen 384, which 10 starts with an email from Todd True to Christopher 11 Hacker and says that -- looks like Todd True 12 actually works in your division, CPCUS, right? 13 A That means he worked for Consumer 14 Products. There's many different departments in 15 Consumer Products. I didn't know everyone. 16 Q Hacker worked for JJCUS. What is that? 17 A I don't know exactly what the initials 18 would stand for. 19 Q Rosolowsky worked in your department, 20 according to this? 21 MS. O'CONNOR: Objection to the form. 22 A He worked for consumer products. 23 Q You worked for consumer products, too, 24 right? 25 A Yes, along with a lot of other people.</p>
<p style="text-align: right;">Page 162</p> <p>1 you about whether babies, the talc should be used 2 around babies. We have the person dealing with the 3 packaging and we have somebody directly in your 4 department, right? 5 MS. O'CONNOR: Objection to the form 6 of the question. You can answer. 7 A I don't interpret this as Fred saying he 8 doesn't agree. He is talking about there are some 9 doctors out there. He is not giving his personal 10 opinion. 11 Q What he is saying is he understands that 12 you are using corn starch instead and that you are 13 not marketing baby powder for babies anymore and he 14 worked in your same department. 15 MS. O'CONNOR: Objection to the form. 16 You can answer. 17 A Again, I don't know the background for 18 Fred saying this. 19 Q Did you know it was the mission of people 20 at Johnson and Johnson to get talc, while you were 21 out there promoting it, to get talc removed entirely 22 from the supermarkets in the baby aisle? 23 MS. O'CONNOR; Objection to the form. 24 Mischaracterizes the testimony. You can answer. 25 A Not true. There was not a mission to get</p>	<p style="text-align: right;">Page 164</p> <p>1 Q What is stated here is, "I want to give 2 you a heads up that I am on a bit of a mission to 3 strongly consider moving talc from the baby aisle. 4 I sent notes to Paul Serbiak and Fred Tewell as well 5 as one to Fred K below. Who is Paul Serbiak? 6 A Paul was the head of the R and D 7 department. 8 Q So he was head of R and D and he was also 9 privy to the mission to remove talc entirely from 10 the baby aisle, right? 11 MS. O'CONNOR: Objection. Calls for 12 speculation. You can answer. 13 Q According to this. 14 A According to this email, he was privy to 15 one person's opinion. 16 Q Then they state on the bottom, "I 17 understand this is a 70 million dollar business in 18 the U.S. alone unsupported. So any changes are 19 risky. However, given a number of other ingredient 20 issues we are facing, this seems like an easy fix 21 and win. I know this will be controversial and will 22 need to work hard to justify the cost implications. 23 I also see great positives associated with it in our 24 challenge to maintain mom's trust and deliver on our 25 baby expertise." I read that correct?</p>

<p style="text-align: right;">Page 165</p> <p>1 A Yes. That's what it says.</p> <p>2 Q None of this information was shared with</p> <p>3 you, this debate that was going on about whether</p> <p>4 babies should even been around baby powder while you</p> <p>5 were supposed to be the person who was supposed to</p> <p>6 be the spokesperson?</p> <p>7 MS. O'CONNOR: Objection to the form</p> <p>8 of the question. You can answer.</p> <p>9 Q Is that right?</p> <p>10 A I've seen of this email.</p> <p>11 Q Do you remember back in 2000 when there</p> <p>12 was an issue about whether the talc itself without</p> <p>13 asbestos was going to be classified as a human</p> <p>14 carcinogen by the National Toxicology Project? Do</p> <p>15 you recall that?</p> <p>16 A Yes.</p> <p>17 Q Did anyone ever tell you that Johnson and</p> <p>18 Johnson had a standby statement ready to go from a</p> <p>19 PR perspective that if somebody determined that the</p> <p>20 talc was carcinogenic they were ready to switch to</p> <p>21 cornstarch on a moment's notice? Did you know</p> <p>22 that?</p> <p>23 MS. O'CONNOR: Objection to the form.</p> <p>24 Misstates the evidence, ambiguous.</p> <p>25 A Part of our process would be if the NTP</p>	<p style="text-align: right;">Page 167</p> <p>1 MS. O'CONNOR: Objection to the form</p> <p>2 of the question.</p> <p>3 A They were well aware of the people that</p> <p>4 were providing the evidence.</p> <p>5 Q So they were well aware you were hiring</p> <p>6 people -- let's not go there. That's a whole other</p> <p>7 day.</p> <p>8 You agree with me that you had a</p> <p>9 standby statement ready to go to pull the Johnson's</p> <p>10 Baby Powder with talc from the market if you lost</p> <p>11 the battle before the National Toxicology Project,</p> <p>12 right?</p> <p>13 MS. O'CONNOR: Objection to the form</p> <p>14 If you have a document, show her the document.</p> <p>15 MR. PLACITELLA: I'm asking her what</p> <p>16 she knows.</p> <p>17 A In the normal course of business it was</p> <p>18 proven to have something ready.</p> <p>19 Q Let me show you 411. 411 is a November 9</p> <p>20 2000 memo from Kate Triggs. Do you know who Kate</p> <p>21 Triggs is?</p> <p>22 A No.</p> <p>23 Q How about Sarah Colamarino?</p> <p>24 A Yes. She was director of communications.</p> <p>25 Q What does that mean, director of</p>
<p style="text-align: right;">Page 166</p> <p>1 determined the ingredient was carcinogenic, as a</p> <p>2 company we would do the responsible thing and have a</p> <p>3 response.</p> <p>4 Q So that was pretty highstakes stuff,</p> <p>5 because if the NTP found there was any carcinogens</p> <p>6 in the Johnson's Baby Powder, you would have pulled</p> <p>7 the product from the market right then and there,</p> <p>8 right?</p> <p>9 A The important thing is they did not find</p> <p>10 it to be a carcinogen.</p> <p>11 Q That's because you leaned on them really</p> <p>12 hard. We will do that on another day, and you got</p> <p>13 them to change your vote, right?</p> <p>14 A That's not correct.</p> <p>15 Q You didn't get them to change the vote</p> <p>16 from like 13 to 2 to something different? That</p> <p>17 never happened?</p> <p>18 MS. O'CONNOR: Objection to the form.</p> <p>19 A The NTP is made up of all different kinds</p> <p>20 of scientists, government agencies as well as</p> <p>21 independent toxicologists and they made their</p> <p>22 decision based on the science.</p> <p>23 Q They also made their decision based on</p> <p>24 people that you hired that you never told them were</p> <p>25 representing you, right?</p>	<p style="text-align: right;">Page 168</p> <p>1 communications?</p> <p>2 A She would be responsible for the ultimate</p> <p>3 overall communications of any issue that had to be</p> <p>4 communicated.</p> <p>5 Q If you look at the last page it states</p> <p>6 Johnson and Johnson Consumer NTP Talc Draft Holding</p> <p>7 Statement. It starts out, "Johnson and Johnson</p> <p>8 intends to discontinue its use of talc in all of its</p> <p>9 consumer products in the U.S. beginning December 1,</p> <p>10 2000. The company's U.S. manufacturing operations</p> <p>11 will switch to cornstarch."</p> <p>12 Did I read that correctly?</p> <p>13 A That's what it says, yes.</p> <p>14 Q That never happened, right?</p> <p>15 A No, because the NTP did not determine talc</p> <p>16 to be a carcinogen.</p> <p>17 Q We will do that on another day.</p> <p>18 MS. O'CONNOR: Objection to the</p> <p>19 colloquy.</p> <p>20 MR. PLACITELLA: I want to finish</p> <p>21 this part today.</p> <p>22 Q At some point in time you became involved</p> <p>23 in what kind of warnings or caution statements</p> <p>24 should be used on Johnson's Baby Powder products,</p> <p>25 correct?</p>

<p style="text-align: right;">Page 169</p> <p>1 A Correct.</p> <p>2 Q And you became involved, but you had no</p> <p>3 formal training in this regard and no expertise in</p> <p>4 this regard, correct?</p> <p>5 MS. O'CONNOR: Objection to the form.</p> <p>6 You can answer.</p> <p>7 A I was involved as a member of the team.</p> <p>8 Q To your knowledge has the use of Johnson</p> <p>9 Baby Powder ever resulted in the death of any human</p> <p>10 being?</p> <p>11 MS. O'CONNOR: Objection to the form</p> <p>12 of the question. You can answer.</p> <p>13 A To my knowledge, no.</p> <p>14 Q Was the risk of asphyxiation to babies who</p> <p>15 were exposed to Johnson's Baby Powder known within</p> <p>16 Johnson and Johnson?</p> <p>17 MS. O'CONNOR: Objection to the form</p> <p>18 of the question. You can answer.</p> <p>19 A Like we talked about earlier, normal use</p> <p>20 of the product is fine. It is safe to use.</p> <p>21 We took very seriously we had a</p> <p>22 responsibilities to address the use, misuse and the</p> <p>23 abuse of a product.</p> <p>24 Q Let me ask the question. Was the risk of</p> <p>25 asphyxiation to babies who were exposed to Johnson</p>	<p style="text-align: right;">Page 171</p> <p>1 of the question.</p> <p>2 A What was the question?</p> <p>3 Q You created a package that resembled in</p> <p>4 form a baby bottle.</p> <p>5 A Baby bottles come in all sizes and shapes</p> <p>6 and colors. It does not look like a baby bottle.</p> <p>7 Q You are not aware of any information</p> <p>8 within Johnson and Johnson where there was a</p> <p>9 discussion about the packaging reassembling a baby</p> <p>10 bottle?</p> <p>11 MS. O'CONNOR: Objection to the form</p> <p>12 of the question.</p> <p>13 A Yes, I'm aware there was an allegation</p> <p>14 that it did.</p> <p>15 Q You said there was allegations about</p> <p>16 packaging for the baby powder reassembling a baby</p> <p>17 bottle. What did you mean by that?</p> <p>18 A I remember -- I don't remember where it</p> <p>19 came from. I remember it was early. Probably in</p> <p>20 the '80s, but there was an allegation that because</p> <p>21 of that, babies would grab it. Babies grab</p> <p>22 anything.</p> <p>23 Q Did the allegation originate outside the</p> <p>24 company or inside the company?</p> <p>25 A Outside the company.</p>
<p style="text-align: right;">Page 170</p> <p>1 and Johnson Baby Powder known within Johnson and</p> <p>2 Johnson?</p> <p>3 MS. O'CONNOR: Objection to the form</p> <p>4 of the question. You can answer.</p> <p>5 A With the normal use of the product, no.</p> <p>6 Q You say normal use. What does that mean?</p> <p>7 A Used in a diapering situation, applying it</p> <p>8 to the hand and then the body. Not giving it to a</p> <p>9 child to play with.</p> <p>10 Q But you knew that could happen?</p> <p>11 A We advised against it.</p> <p>12 Q But you knew that could happen, correct?</p> <p>13 MS. O'CONNOR: Objection to the form</p> <p>14 of the question.</p> <p>15 A Yes, because we know babies grab things.</p> <p>16 That's why we addressed the situation.</p> <p>17 Q And you actually made the product to look</p> <p>18 like a bottle, right?</p> <p>19 MS. O'CONNOR: Objection to the form</p> <p>20 of the question.</p> <p>21 A No.</p> <p>22 Q You could have put it in big square box,</p> <p>23 but you put made it white and put it in a bottle,</p> <p>24 right?</p> <p>25 MS. O'CONNOR: Objection to the form</p>	<p style="text-align: right;">Page 172</p> <p>1 Q What was done in response to that concern?</p> <p>2 A Well, like any concern that comes in, as I</p> <p>3 said, we take things very seriously and look at</p> <p>4 this. But knowing the behavior of babies, as I</p> <p>5 said, they will grab anything.</p> <p>6 We advise parents to keep the baby</p> <p>7 powder and all products out of reach of babies.</p> <p>8 Q But it was not unforeseeable that babies</p> <p>9 would grab the bottle of baby powder, correct?</p> <p>10 MS. O'CONNOR: Objection to the form.</p> <p>11 Vague, ambiguous, calls for a legal conclusion. You</p> <p>12 can answer.</p> <p>13 A Yes. Babies grabbing things, anything.</p> <p>14 That is why we advised parents to keep things out of</p> <p>15 their reach.</p> <p>16 Q I'm going to blow up 402. 402 is an email</p> <p>17 from yourself to a bunch of people.</p> <p>18 MS. O'CONNOR: Is this the entirety</p> <p>19 of the document?</p> <p>20 MR. PLACITELLA: As far as I know,</p> <p>21 yes. We will do a piece at a time, so it is bigger.</p> <p>22 Q It is from yourself to a bunch of people.</p> <p>23 There's some new people on this. There's a</p> <p>24 Katherine Rockwell. Who is Katherine Rockwell?</p> <p>25 A I don't remember.</p>

<p style="text-align: right;">Page 173</p> <p>1 Q Who is the CPC copy approval baby?</p> <p>2 A That's an internal process.</p> <p>3 Q That's just a group, or something?</p> <p>4 A Yes.</p> <p>5 Q Then you have Lorena Telofski, Michelle</p> <p>6 Turk, Clayton Paterson. Who is Clayton Paterson?</p> <p>7 A He is the regulatory attorney.</p> <p>8 Q Who is Michelle Turk?</p> <p>9 A Regulatory.</p> <p>10 Q Who is Scott Beaudry?</p> <p>11 A R and D.</p> <p>12 Q Mary Estocin?</p> <p>13 A Marketing.</p> <p>14 Q And Tammy Jones?</p> <p>15 A I don't remember.</p> <p>16 Q Your email talks about a warning being put</p> <p>17 on Johnson's Baby Powder?</p> <p>18 MS. O'CONNOR: Objection to the form</p> <p>19 of the question. You can answer. Really hard to do</p> <p>20 without the document.</p> <p>21 A I'm talking about labels on both Johnson's</p> <p>22 Baby Oil and Johnson's Baby Powder.</p> <p>23 Q And on the oil you recommended warning --</p> <p>24 I see. On baby powder you recommended a warning,</p> <p>25 correct?</p>	<p style="text-align: right;">Page 175</p> <p>1 fair to do this right now. If you want to ask the</p> <p>2 witness --</p> <p>3 MR. PLACITELLA: It is only one page.</p> <p>4 That's all I got. One page.</p> <p>5 Q My question is, do you recall your</p> <p>6 recommendation for a warning on baby powder being</p> <p>7 not approved? You say Kate, not approved at</p> <p>8 this time?</p> <p>9 MS. O'CONNOR: Objection to the form.</p> <p>10 Q What happened?</p> <p>11 A What I meant was the way it was presented</p> <p>12 to me in the system was not approved. So I'm</p> <p>13 telling them to make sure that it says the</p> <p>14 following.</p> <p>15 Q I'm not sure I understand. You say the</p> <p>16 way it came to you, not approved. What does that</p> <p>17 mean?</p> <p>18 A The copy approval process was a</p> <p>19 computerized process. And the graphics would come</p> <p>20 to us for approval, the team.</p> <p>21 I was referring to the number as</p> <p>22 written there, and I was saying that was not</p> <p>23 approved and I told them what to put on it.</p> <p>24 Q And did that happen?</p> <p>25 A I'm going to assume so. I don't know.</p>
<p style="text-align: right;">Page 174</p> <p>1 MS. O'CONNOR: Objection to the form.</p> <p>2 You can answer.</p> <p>3 A Yes.</p> <p>4 Q And the warning you recommended was, for</p> <p>5 baby powder, keep powder away from face to avoid</p> <p>6 inhalation which could cause breathing problems.</p> <p>7 Avoid contact with eyes. For external use only.</p> <p>8 Close tightly after use.</p> <p>9 You say all this should have been bold,</p> <p>10 right?</p> <p>11 A Correct.</p> <p>12 Q But that was rejected?</p> <p>13 MS. O'CONNOR: Objection to the form.</p> <p>14 Q According to this it says not approved at</p> <p>15 this time.</p> <p>16 MS. O'CONNOR: This is why we need</p> <p>17 the document. It is unfair to question a witness.</p> <p>18 MR. PLACITELLA: I'll email name it</p> <p>19 to you, how is that?</p> <p>20 MS. O'CONNOR: We need a hard copy.</p> <p>21 MR. PLACITELLA: I'll email it to</p> <p>22 you. You can have it printed out. Sorry. I made a</p> <p>23 mistake. There's a lot of documents.</p> <p>24 MS. O'CONNOR: I understand. I don't</p> <p>25 work here. We can do this on a break. It is not</p>	<p style="text-align: right;">Page 176</p> <p>1 Q Didn't you have to run this by the</p> <p>2 lawyers, and what did the lawyers --</p> <p>3 A I wouldn't have approved it personally</p> <p>4 without them.</p> <p>5 Q Who is Lara Kegley?</p> <p>6 A She managed the approval process.</p> <p>7 MR. PLACITELLA: I'll make a copy so</p> <p>8 we have it as part of the record.</p> <p>9 Q 385 is an email from yourself to David</p> <p>10 Chase, Katherine Martin, forwarding another email,</p> <p>11 correct?</p> <p>12 A Yes.</p> <p>13 MS. O'CONNOR: I ask that you not</p> <p>14 question the witness about that and we can take it</p> <p>15 off line and address it.</p> <p>16 MR. PLACITELLA: Bates number is</p> <p>17 2918, et cetera. I won't ask about the highlighted</p> <p>18 section, but we may have to deal with it a different</p> <p>19 day.</p> <p>20 Q Involved in this process about what</p> <p>21 warnings should go on the product, was yourself and</p> <p>22 Todd True, correct?</p> <p>23 A He is copied on the original.</p> <p>24 Q You obviously interacted with Todd True on</p> <p>25 what was appropriate labeling for the baby powder</p>

<p style="text-align: right;">Page 177</p> <p>1 product?</p> <p>2 A We were both copied on this memo.</p> <p>3</p> <p>4 MR. PLACITELLA: I'll say this. I</p> <p>5 can have information to that effect. It is curious</p> <p>6 that it would be an issue since there are redactions</p> <p>7 on the document.</p> <p>8 MS. O'CONNOR: I understand. I have</p> <p>9 the same thought.</p> <p>10 MR. PLACITELLA: I don't want to get</p> <p>11 in a bad place.</p> <p>12 MS. O'CONNOR: I understand. I</p> <p>13 appreciate that.</p> <p>14 MR. PLACITELLA: Although you have</p> <p>15 just knocked out fifteen minutes of my deposition.</p> <p>16 MS. O'CONNOR: You saved all of us.</p> <p>17</p> <p>18 Q At one point in time you wanted to</p> <p>19 actually put an X over the baby's nose and mouth on</p> <p>20 the packaging. Do you recall that?</p> <p>21 A Yes.</p> <p>22 Q That was met with some resistance. Is</p> <p>23 that fair?</p> <p>24 MS. O'CONNOR: Objection to the form.</p> <p>25 You can answer.</p>	<p style="text-align: right;">Page 179</p> <p>1 Q And they specifically did not copy you,</p> <p>2 correct?</p> <p>3 MS. O'CONNOR: Objection to the form.</p> <p>4 You can answer.</p> <p>5 A I'm not copied on this, no.</p> <p>6 Q Who is Lee Grace?</p> <p>7 A I don't remember.</p> <p>8 Q The objection is stated here. We tried</p> <p>9 initially placing the X over the illustrated baby's</p> <p>10 mouth and nose and it was not optimal. It began to</p> <p>11 look like the baby was participating in an anti</p> <p>12 something demonstration or was about to enter some</p> <p>13 type of nuclear fallout area. That's why we decided</p> <p>14 to place it on the cheek instead.</p> <p>15 A I see that.</p> <p>16 Q Did anybody ever tell you what was going</p> <p>17 on?</p> <p>18 MS. O'CONNOR: Objection to the form.</p> <p>19 You can answer.</p> <p>20 A I'm not copied on this, but I had final</p> <p>21 approval for what went on the label.</p> <p>22 Q Some people within the organization really</p> <p>23 didn't want that X over the baby's mouth. Is that</p> <p>24 fair?</p> <p>25 A For the reasons stated here. Looks</p>
<p style="text-align: right;">Page 178</p> <p>1 A It was open for discussion. There were a</p> <p>2 lot of things that needed to be on a label and we</p> <p>3 wanted to make sure that we were addressing</p> <p>4 everybody we could with a limited amount of space.</p> <p>5 Q Who is Steven Bramwell?</p> <p>6 A I don't remember.</p> <p>7 Q Diane Brokaw?</p> <p>8 A I don't remember her either.</p> <p>9 Q Pamela Walsh?</p> <p>10 A Pam Walsh was responsible for the copy</p> <p>11 approval process.</p> <p>12 Q Christine Geist we talked about.</p> <p>13 A Yes.</p> <p>14 Q Did you know that once you made this</p> <p>15 recommendation there were private meetings within</p> <p>16 Johnson and Johnson that said we can't put the X</p> <p>17 over the mouth because it is too dramatic and it is</p> <p>18 going to cause us problems? Did you know that?</p> <p>19 MS. O'CONNOR: Objection to the form</p> <p>20 of the question. You can answer.</p> <p>21 A I'm not aware of that, no.</p> <p>22 Q This is 391 is a May, 21, 2009 email from</p> <p>23 Bramwell to other people in your department. Do you</p> <p>24 see that?</p> <p>25 A I see it, yes.</p>	<p style="text-align: right;">Page 180</p> <p>1 like it, yes.</p> <p>2 Q That's May 21, 2009, right?</p> <p>3 A That's what it says.</p> <p>4 Q And then the very next day, I gave you</p> <p>5 392, the very next day is when there was a</p> <p>6 discussion with the Vice-President, legal, everybody</p> <p>7 else was up there in your division about we don't</p> <p>8 know what the size of the particles are that the</p> <p>9 baby is going to inhale, right? The very next day.</p> <p>10 MS. O'CONNOR: Objection to the form</p> <p>11 of the question. You can answer.</p> <p>12 A The date does follow, yes.</p> <p>13 Q What was Project Oracle?</p> <p>14 A That was a project to help ensure global</p> <p>15 safety labeling.</p> <p>16 Q What was your role?</p> <p>17 A Facilitator to help ensure that we had</p> <p>18 consistent labeling on the baby products throughout</p> <p>19 the regions.</p> <p>20 Q Did you have anything to do with the</p> <p>21 labeling that went to the people who were actually</p> <p>22 putting the product in the bottles?</p> <p>23 MS. O'CONNOR: Objection to the form.</p> <p>24 You can answer.</p> <p>25 A I don't understand the question.</p>



<p style="text-align: right;">Page 181</p> <p>1 Q Did you know that in certain parts of the</p> <p>2 world Johnson and Johnson was warning its own</p> <p>3 employees about the risk of cancer from exposure to</p> <p>4 talc that had asbestos that was used for baby</p> <p>5 powder?</p> <p>6 MS. O'CONNOR: Objection to the form</p> <p>7 of the question.</p> <p>8 A No, we don't believe that there was a</p> <p>9 danger to develop cancer using Johnson's Baby</p> <p>10 Powder.</p> <p>11 Q I'll show you 317. 317 is product</p> <p>12 material safety data sheet for Johnson's Baby Powder</p> <p>13 Blossom. Do you see that? I believe this was used</p> <p>14 actually in Singapore, but came out of something</p> <p>15 known as a Johnson's Fact Book. Do you know what a</p> <p>16 fact book is?</p> <p>17 A Yes.</p> <p>18 Q What is a fact book?</p> <p>19 A A fact book is an R and D document that</p> <p>20 has the information on products.</p> <p>21 Q In this document, if you go to the Bates</p> <p>22 number ending 601, the top is entitled Johnson's</p> <p>23 Baby Blossom Powder. Do you see that?</p> <p>24 A Yes.</p> <p>25 Q Do you see down at the bottom under</p>	<p style="text-align: right;">Page 183</p> <p>1 the warnings were the same throughout the world as</p> <p>2 it related to baby powder, correct?</p> <p>3 A No, because this doesn't pertain to the</p> <p>4 normal use of the product.</p> <p>5 Q It pertains to the people who were filling</p> <p>6 the product with the baby powder, doesn't it?</p> <p>7 MS. O'CONNOR: Objection to the form.</p> <p>8 A It seems to, yes.</p> <p>9 Q Now, here is 397. 397 starts at the top.</p> <p>10 It is an email from Charles Wajszczuk. How do you</p> <p>11 say that correctly?</p> <p>12 A You won't. We never got it right. We</p> <p>13 called him Dr. Charles.</p> <p>14 Q Okay, Dr. Charles. An email from Dr.</p> <p>15 Charles to yourself and a number of other people.</p> <p>16 Do you see that?</p> <p>17 A Yes.</p> <p>18 Q I want to work backwards and understand</p> <p>19 something. If I go to the last page, there's an</p> <p>20 email from Kyle Schadler. Do you know who that is?</p> <p>21 A No.</p> <p>22 Q To a Miriam Martinez. Who is Miriam</p> <p>23 Martinez?</p> <p>24 A I don't know.</p> <p>25 Q It talks about a consumer who had ovarian</p>
<p style="text-align: right;">Page 182</p> <p>1 toxicity and irritation. Under carcinogen, talc</p> <p>2 containing asbestiform fibers, see asbestos?</p> <p>3 A I see it says that, yes.</p> <p>4 Q Did you know that people who were involved</p> <p>5 at Johnson's Baby Powder in other parts of the world</p> <p>6 were being warned about the cancer risk from talc</p> <p>7 that contained asbestos?</p> <p>8 MS. O'CONNOR: Objection to the form</p> <p>9 of the question.</p> <p>10 A I don't know how to interpret the way this</p> <p>11 information is given. Underneath it says talc</p> <p>12 not containing asbestos. One says containing and</p> <p>13 one says it doesn't. I think -- I don't know how to</p> <p>14 interpret this.</p> <p>15 Q So clearly Johnson and Johnson recognizes</p> <p>16 if the talc contains asbestos, it could cause</p> <p>17 cancer, right?</p> <p>18 MS. O'CONNOR: Objection to the form.</p> <p>19 You can answer.</p> <p>20 Q That's what it says on there own material</p> <p>21 safety data sheet.</p> <p>22 MS. O'CONNOR: Objection.</p> <p>23 A I don't know how to interpret this.</p> <p>24 Q This information was never conveyed to you</p> <p>25 as part of Project Oracle in terms of making sure</p>	<p style="text-align: right;">Page 184</p> <p>1 cancer in her family and she is asking questions</p> <p>2 about talc. Is that fair?</p> <p>3 A That's what it seems to be, yes.</p> <p>4 Q And on the page above that there's a memo</p> <p>5 from Miriam Martinez to yourself?</p> <p>6 A Where?</p> <p>7 Q Just go --</p> <p>8 A Yes.</p> <p>9 Q The first is the memo from you and it</p> <p>10 says, "There's nothing additional to add to this</p> <p>11 information. The study and analysis of the</p> <p>12 literature was done on talc, not a specific product.</p> <p>13 You may want to give her dates of reports and</p> <p>14 suggest she discuss with her doctor. I do not have</p> <p>15 readily available copy." What reports and</p> <p>16 literature are you talking about?</p> <p>17 A I don't remember.</p> <p>18 Q Miriam Martinez is who?</p> <p>19 A I don't know.</p> <p>20 Q Mark Demu. Do you know who that is?</p> <p>21 A No.</p> <p>22 Q The response back is "Nancy, I agree with</p> <p>23 you. This information can answer any concern</p> <p>24 regarding talc and ovarian cancer. However,</p> <p>25 consumer wasn't satisfied because her main question</p>



<p style="text-align: right;">Page 185</p> <p>1 is why talc is still used in this product and was 2 removed from all of the J and J baby products." Do 3 you see that? 4 A I see that here, yes. 5 Q Then if you go to Bates number 1285, they 6 talk about, or you say that you suggest that Dr. 7 Charles, Charlie, that is Dr. Charles? 8 A Correct. 9 Q Respond in writing, right? 10 A Correct. 11 Q And then we can go to the front page, the 12 very first page. 13 A On October 5, 2011, you write to a couple 14 of people and you say, "As manager of product safety 15 and education, I apologize if this issue has been 16 going around and around and around. I'm not sure 17 why the call center or Dr. Wajszczuk cannot respond 18 to this consumer writing. However, if Dr. Wajszczuk 19 feels he cannot answer it," -- you don't think you 20 should be the one to answer it, right? 21 A Correct. 22 Q That's not your job? 23 A At that time, 2011, it was not my job to 24 speak directly to consumers. 25 Q Whose job was it?</p>	<p style="text-align: right;">Page 187</p> <p>1 should still be on the market or not? 2 A No. 3 Q After this issue was raised, and it was 4 the discussed with the medical safety officer 5 director, there was no discussion within Johnson and 6 Johnson about whether it was time to take the baby 7 powder with talc off the market? 8 MS. O'CONNOR: Objection to the form 9 of the question. You can answer it. 10 A No. Not that I know of, no. 11 Q Do you know who James Mulieri, 12 M U L I E R I is? 13 A He was part of the call center. 14 Q Diana Boghicev, B O G H I C E V? 15 A No. 16 Q Sandra Cerrea, C E R R E A? 17 A No. 18 Q Joseph Greco, G R E C O? 19 A Research and development. 20 Q Dawn Miles. Who is that? 21 A Marketing. 22 Q David Mays? 23 A Director of the Global Scientific and 24 Professional Engagement. 25 Q Vicky Cox Vogt?</p>
<p style="text-align: right;">Page 186</p> <p>1 A The call center or the doctor. 2 Q The doctor then says to you, "It is not my 3 job either. That's not a medical question or a 4 scientific question. That's a business PR 5 question." Right? 6 A That's what he says. 7 Q According to the doctor, the issue about 8 whether talcum products should still be on the 9 market is not one for him, it is for the business 10 people, right? 11 MS. O'CONNOR: Objection to the form. 12 You can answer the question. 13 A I just know what it says here. 14 Q That's the import of what the doctor says. 15 He is the senior director, medical safety officer, 16 correct? 17 A That's the title, yes. 18 Q He is saying don't ask me, ask the 19 business people. I can't answer that question. 20 MS. O'CONNOR: Objection to the 21 form. You can answer. 22 A He didn't feel he was the appropriate 23 person to answer this. 24 Q Did you ever have a conversation with the 25 doctor about his opinions about whether the product</p>	<p style="text-align: right;">Page 188</p> <p>1 A R and D. 2 Q Am I correct that as far as you are aware, 3 the warnings on baby powder never mentioned anything 4 about the hazard presented by the product being 5 aerosolized in normal application? 6 MS. O'CONNOR: Objection to the form. 7 You can answer. 8 A No, we didn't use those words. We talked 9 about the safe way to use the product. 10 Q The warning never talked about peroneal 11 use of the product near the vagina? 12 A No. 13 Q The warning never said anything about 14 cancer, correct? 15 A Correct. 16 Q Never said anything about asbestos? 17 A Correct. 18 Q Never said anything about heavy metals? 19 A Correct. 20 Q Never said anything about risks to adults? 21 MS. O'CONNOR: Objection to the form. 22 You can answer. 23 A Not specifically to adults, no. 24 Q Did it ever say anything about a risk of 25 serious injury?</p>

<p style="text-align: right;">Page 189</p> <p>1 A If used incorrectly, yes.</p> <p>2 Q What is that?</p> <p>3 A It could cause breathing issues.</p> <p>4 MR. PLACITELLA: I think this is a</p> <p>5 good place a break.</p> <p>6 THE VIDEOGRAPHER: The time is now</p> <p>7 4:05 p.m. We are going off the record.</p> <p>8</p> <p>9 THE VIDEOGRAPHER: The time is now</p> <p>10 4:21 p.m. We are back on the record.</p> <p>11</p> <p>12 Q I just want to go back and spend a few</p> <p>13 minutes on this, since you brought it up. Your role</p> <p>14 for Johnson and Johnson, as it related to the issue</p> <p>15 with the National Toxicology Project, was what</p> <p>16 specifically?</p> <p>17 A Probably more of a project manager</p> <p>18 facilitator.</p> <p>19 Q What does that mean?</p> <p>20 A Ensuring that the right people were in the</p> <p>21 room, that any documents that we discussed that were</p> <p>22 needed would be addressed. That we were all on the</p> <p>23 same page, I guess.</p> <p>24 Q Who way the person in charge of making</p> <p>25 sure that all of the information that would tell the</p>	<p style="text-align: right;">Page 191</p> <p>1 A Yes.</p> <p>2 Q 11:56 p m. Really?</p> <p>3 A I'm a night person.</p> <p>4 Q It is to a whole bunch of people, right?</p> <p>5 A Yes.</p> <p>6 Q And it talks about a meeting, the talc</p> <p>7 meeting that is going to occur on 4-30-01. Do you</p> <p>8 see that?</p> <p>9 A Yes.</p> <p>10 Q You attached the latest information</p> <p>11 received from the National Toxicology Project,</p> <p>12 correct?</p> <p>13 A Yes.</p> <p>14 Q On the next page, like the fifth</p> <p>15 photograph down, I'll blow it up, the statement is</p> <p>16 made, "The presence of talc on the list ends years</p> <p>17 of controversy. Many people have believed for</p> <p>18 decades that talc powder results in increased cancer</p> <p>19 risk, and studies are confirmed this connection.</p> <p>20 Studies have shown increased incidents of alveolar</p> <p>21 bronchiolar carcinomas of the lung in female rats.</p> <p>22 Recently published epidemiology studies suggest talc</p> <p>23 exposure among pottery workers associated with lung</p> <p>24 and ovarian cancer in woman." Do you see that?</p> <p>25 A Yes, I do.</p>
<p style="text-align: right;">Page 190</p> <p>1 whole story would be communicated to the federal</p> <p>2 government and in the National Toxicology Program?</p> <p>3 MS. O'CONNOR: Objection to the form</p> <p>4 of the question.</p> <p>5 Q Who was person at Johnson and Johnson?</p> <p>6 MS. O'CONNOR: Objection to the form</p> <p>7 of the question. You can answer.</p> <p>8 A That communicator would be Helen Han Hsu,</p> <p>9 who was the toxicologist.</p> <p>10 Q So she would be the one to make sure all</p> <p>11 of the documents, the good and the bad, were</p> <p>12 forwarded to the project, correct?</p> <p>13 MS. O'CONNOR: Objection to the form,</p> <p>14 foundation, vague and ambiguous. You can answer.</p> <p>15 A She was the one who would communicate with</p> <p>16 whoever, the agency itself, or the different people</p> <p>17 involved.</p> <p>18 Q I'm going to hand you 404. 404 starts out</p> <p>19 on the top with memo from yourself dated April 29,</p> <p>20 2001 to Lorena Tolefski. She was the toxicologist?</p> <p>21 A No. Lorena is in R and D.</p> <p>22 Q R and D. I'm sorry.</p> <p>23 I want to do this in order. So prior</p> <p>24 to your email, there's another email that you wrote</p> <p>25 on April 25th at 11:56 p.m. Do you see that?</p>	<p style="text-align: right;">Page 192</p> <p>1 Q What you state is that, "The latest report</p> <p>2 should be a topic of discussion." Correct?</p> <p>3 A That is what I said, yes.</p> <p>4 Q "Mike Chudkowski will have some comments</p> <p>5 on this as well as from the perspective from the</p> <p>6 CPFA" Did you have a role as it related to the CPFA</p> <p>7 within Johnson and Johnson?</p> <p>8 A No. That was toxicology.</p> <p>9 Q You were totally out of it?</p> <p>10 A Yes.</p> <p>11 Q It says, "Mike will also give a status on.</p> <p>12 transfer of talc files upon his retirement in June."</p> <p>13 Do you see that?</p> <p>14 A Yes.</p> <p>15 Q Do you remember anything about that?</p> <p>16 A No.</p> <p>17 Q There's another email from you up above</p> <p>18 and it says that, "Helen has been in contact with</p> <p>19 the CPFA concerning the subject." Correct?</p> <p>20 A Yes. That's what it says, yes.</p> <p>21 Q Do you know what the CPFA's role was as it</p> <p>22 relates to the National Toxicology Program?</p> <p>23 A I can't say specifically, no.</p> <p>24 Q I'm going to show you 405, which is an</p> <p>25 email from Richard Zazenski. Do you know who</p>

<p style="text-align: right;">Page 193</p> <p>1 Richard Zazenski is?</p> <p>2 A No.</p> <p>3 Q And it is to -- it says here: Richard</p> <p>4 Zazenski is from Luzenac, correct?</p> <p>5 A That is what it says.</p> <p>6 Q Did you know who Luzenac was?</p> <p>7 A I believe they are a talc supplier.</p> <p>8 Q For Johnson's Baby Powder?</p> <p>9 A Yes.</p> <p>10 Q The email is sent to Michael Chudkowski in</p> <p>11 your division, correct?</p> <p>12 A He worked for Consumer Products, yes.</p> <p>13 Q He says, the subject is winning hand. Do</p> <p>14 you see that?</p> <p>15 A That's what it says.</p> <p>16 Q "Mike, Bill. I'll let me you guys read</p> <p>17 this for now, but it is for your eyes only until we</p> <p>18 finalize. It is the winning hand in getting talc</p> <p>19 without asbestos dismissed from the NTP nonsense.</p> <p>20 For now, I'll graciously accept one hundred percent</p> <p>21 of the credit finding CRE, convincing them to get</p> <p>22 involved and developing the Fatal Flaw Strategy</p> <p>23 single handedly saving the talc business from</p> <p>24 certain ruin." Do you see that?</p> <p>25 A That's what it says.</p>	<p style="text-align: right;">Page 195</p> <p>1 Q Was that consistent with your</p> <p>2 understanding or you don't know?</p> <p>3 A I'm not familiar, no.</p> <p>4 Q He states on the next page, "In early</p> <p>5 2000, NTP listed talc for possible listing in the</p> <p>6 ROC because back in the early 1990s, NTP published</p> <p>7 the results of a two year talc inhalation study on</p> <p>8 rats and mice and concluded that talc caused lung</p> <p>9 tumors in female rats." Were you aware of that?</p> <p>10 A No.</p> <p>11 Q Go to the next slide. It says, "Now,</p> <p>12 realistically, there are some health issues with</p> <p>13 talc. For near 20 years epidemiologists have been</p> <p>14 finding a weak, but persistent statistical link</p> <p>15 between the hygienic use of talc and ovarian</p> <p>16 cancer." Were you aware of that?</p> <p>17 MS. O'CONNOR: Objection to the form.</p> <p>18 You can answer.</p> <p>19 A There's been a hypothesis that there was a</p> <p>20 lin, yes.</p> <p>21 Q No. "A week, but persistent statistical</p> <p>22 link." Were you aware of that?</p> <p>23 A No.</p> <p>24 MS. O'CONNOR: Objection to the form.</p> <p>25 A Not in those words, no.</p>
<p style="text-align: right;">Page 194</p> <p>1 Q Do you know what the CRE is?</p> <p>2 A No.</p> <p>3 Q Do you know what the Fatal Flaw Strategy</p> <p>4 is?</p> <p>5 A No.</p> <p>6 A I have a document I gave you that was</p> <p>7 marked LUZ-1 and it is a narrative from the Talc NTP</p> <p>8 Regulatory Challenge, and it starts out by, "Good</p> <p>9 morning everyone. My name is Steve Jarvis." Do you</p> <p>10 know who Steve Jarvis is?</p> <p>11 A No.</p> <p>12 Q I'm going to ask you some questions about</p> <p>13 what is mention here and see if you know anything.</p> <p>14 On page two he states, "You might be</p> <p>15 interested to know that we produce all the baby</p> <p>16 powder for Johnson and Johnson, including the talc</p> <p>17 for their popular adult product Shower to Shower."</p> <p>18 Did you know that?</p> <p>19 A I knew they were a supplier, yes.</p> <p>20 Q He goes on to say, "In slide 2, the NTP</p> <p>21 was authorized by the Unites States Congress to</p> <p>22 coordinate interagency toxicological testing and to</p> <p>23 publish the formal report on carcinogens, which comes</p> <p>24 out about every 18 to 24 months." Do you see that?</p> <p>25 A I see that.</p>	<p style="text-align: right;">Page 196</p> <p>1 Q If you go to page 5, it states at the top</p> <p>2 that, "Talc and asbestos are similar." Were you</p> <p>3 aware that that was communicated? Let me read the</p> <p>4 whole thing.</p> <p>5 "Finally, there's a long held public</p> <p>6 perception that all talc contains asbestos, and even</p> <p>7 if it doesn't, they are so similar chemically that</p> <p>8 talc probably behaves like asbestos." Are you aware</p> <p>9 that was the position or opinions of your talc</p> <p>10 supplier?</p> <p>11 MS. O'CONNOR: Objection to the</p> <p>12 form.</p> <p>13 A No. He is talking about a public</p> <p>14 perception, not his.</p> <p>15 Q On slide 5 it says, "But then in</p> <p>16 October 2000, NTP issues their draft report on talc</p> <p>17 and announces that the first two formal reviews</p> <p>18 resulted in votes to list talc as a carcinogen. The</p> <p>19 combined vote was 13 to 2 to list." Were you aware</p> <p>20 of that?</p> <p>21 A I was aware of a recommendation. I don't</p> <p>22 remember the numbers.</p> <p>23 Q You didn't know 13 to 2 was the</p> <p>24 recommendation?</p> <p>25 A No.</p>

<p style="text-align: right;">Page 197</p> <p>1 Q Go to page 7. At the bottom it talks  2 about a public meeting and in December the BSC, if  3 you go to the next page, the subcommittee voted 7 to  4 3 not to list the talc. Do you see that?  5 A Yes.  6 Q Then he states, "And make no mistake about  7 it, they knew if they proceeded with a listing,  8 nomination for talc Luzenac America was going to  9 challenge them in court." Did you know that?  10 A No.  11 Q If then it talks about what their  12 successful strategy was. On slide 6 he says, "Our  13 successful defense strategy was three fold. First,  14 to continue to work through the auspices of the  15 CPFA, the Washington based trade association for the  16 cosmetics industry. As you might imagine Luzenac  17 and Johnson and Johnson wield considerable influence  18 on the talc subcommittee." Were you aware of that?  19 A No.  20 Q Then he says, "Secondly, and this was our  21 secret weapon. Engage the services of a Washington  22 Based Center for Regulatory Effectiveness, the CRE."  23 Do you see that?  24 A Yes.  25 Q Does that refresh your recollection as to</p>	<p style="text-align: right;">Page 199</p> <p>1 all of the epidemiology studies they previously used  2 must be declared invalid for use in assessing talc  3 not containing asbestos. This will be an expansion  4 of the Fatal Flaw Defense Luzenac employed in the  5 first review on talc." Do you see that?  6 A Yes, I see that.  7 Q Did you have any understanding that the  8 defense, the Fatal Flaw Defense that was  9 communicated by Luzenac to Johnson and Johnson, was  10 that the talc did not contain asbestos?  11 MS. O'CONNOR: Objection to the form  12 of the question. You can answer.  13 A I was not familiar with the Fatal Flaw  14 Defense.  15 Q So you were not familiar with the fact  16 that are the whole premise before the National  17 Toxicology Project, or one of the premises in not  18 having talc declared a carcinogen was the  19 representations that were made that the talc that  20 was used in baby powder never contained asbestos.  21 You didn't know that?  22 MS. O'CONNOR: Objection to the form  23 of the question. Compound, vague and ambiguous.  24 You may answer.  25 A Could you rephrase the question?</p>
<p style="text-align: right;">Page 198</p> <p>1 who the CRE was?  2 A I see what it stands for.  3 Q Did you know that they were secretly  4 engaged in order to fight talc and cancer before the  5 National Toxicology Project?  6 MS. O'CONNOR: Objection to the form.  7 You can answer.  8 A I don't know they were secretly engaged.  9 Q Do you know whether they ever -- I'm  10 assuming you don't know that they never disclosed  11 who they were representing before the national  12 Toxicology Project?  13 A I don't know that.  14 Q He states at the bottom, "We send emails,  15 faxes, overnight letters and even telephone calls to  16 keep players in the battle right up until the hours  17 before the final executive committee meeting." Did  18 you know that?  19 A No.  20 Q Do you know what role Johnson and Johnson  21 played in that effort?  22 A No.  23 Q He talks about on the next page. "One of  24 the issues we plan to focus on is demonstrating to  25 the NTP, National Toxicology Project, that virtually</p>	<p style="text-align: right;">Page 200</p> <p>1 Q Did you know that one of the ways that  2 Johnson and Johnson and Luzenac were fighting the  3 talc issue before the National Toxicology Project  4 was by taking the position that the talc used in  5 Johnson's Baby Powder never contained asbestos?  6 MS. O'CONNOR: Same objections. You  7 may answer.  8 A I know there were discussions about  9 industrial type of talc and cosmetic talc, and the  10 efforts were to concentrate on cosmetic talc, which  11 is found in Johnson's Baby Powder.  12 Q My question to you was, did you know that  13 one of the primary bases for battling the issue of  14 talc before the National Toxicology Project was the  15 position asserted that there was never any evidence  16 of asbestos in the talc used in Johnson's Baby  17 Powder?  18 MS. O'CONNOR: Objection to the form  19 of the question.  20 Q I'm just asking if you know. It is not  21 for a fight.  22 MS. O'CONNOR: It is a hard question  23 to follow. You can answer.  24 A Well, the basis was that there's no  25 asbestos in the talc used in Johnson's Baby Powder.</p>

<p style="text-align: right;">Page 201</p> <p>1 Q So you knew that's what was being asserted</p> <p>2 before the National Toxicology Project?</p> <p>3 A The question about the NTP was whether it</p> <p>4 was a carcinogen. That's what the discussions were.</p> <p>5 Q Did you know Johnson and Johnson, or do</p> <p>6 you know whether or not Johnson and Johnson took the</p> <p>7 position before the National Toxicology Project that</p> <p>8 there was never any evidence of asbestos in the talc</p> <p>9 used in Johnson's Baby Powder?</p> <p>10 A The position was that the cosmetic talc</p> <p>11 used in Johnson's Baby Powder was not a carcinogen.</p> <p>12 Q You knew that was what was being related</p> <p>13 to the National Toxicology Project?</p> <p>14 A Yes.</p> <p>15 Q Okay. If that turned out to be wrong,</p> <p>16 then the entire premise for what was communicated to</p> <p>17 the federal government would be false, correct?</p> <p>18 MS. O'CONNOR: Objection to the form</p> <p>19 of the question.</p> <p>20 Q Is that correct?</p> <p>21 A We presented evidence, suppliers presented</p> <p>22 evidence, experts presented evidence. We did not</p> <p>23 feel that the products was a carcinogen.</p> <p>24 Q What evidence did you provide to the</p> <p>25 National Toxicology Project proving that there was</p>	<p style="text-align: right;">Page 203</p> <p>1 Musco-4.)</p> <p>2</p> <p>3 Q We mentioned a lot of names during the</p> <p>4 course of the deposition. I asked Leah, as we were</p> <p>5 going through, to write down the name and what the</p> <p>6 person did, so if anybody reads this transcript they</p> <p>7 can try to make sense of what is here.</p> <p>8 Would you take a minute and look at</p> <p>9 that and see if there are any corrections that need</p> <p>10 to be made.</p> <p>11 MS. O'CONNOR: To the best of your</p> <p>12 recollection.</p> <p>13 MR. PLACITELLA: Right.</p> <p>14 A I made some changes.</p> <p>15 Q Are you satisfied that that is accurate?</p> <p>16 A To the best of my knowledge, yes.</p> <p>17 Q I don't think I have any other questions.</p> <p>18 Thank you for your time.</p> <p>19 I do apologize. I was told by</p> <p>20 counsel I got frisky at one point. Italians have a</p> <p>21 hard time with that.</p> <p>22 THE VIDEOGRAPHER: The time is now</p> <p>23 5:00 p.m. We are back on the record.</p> <p>24</p> <p>25</p>
<p style="text-align: right;">Page 202</p> <p>1 never asbestos in the talc used in Johnson's Baby</p> <p>2 Powder?</p> <p>3 A What the question was, was whether or not</p> <p>4 talc was a carcinogen. That's what all the</p> <p>5 discussions were about.</p> <p>6 Q My question is different. What evidence</p> <p>7 did you, Johnson and Johnson, present to the</p> <p>8 National Toxicology Project concerning whether there</p> <p>9 was asbestos ever found in the talc used in</p> <p>10 Johnson's Baby Powder, if you know?</p> <p>11 MS. O'CONNOR: Objection to the form</p> <p>12 of the question. Over broad.</p> <p>13 A No. Everything concentrated on whether or</p> <p>14 not talc was a carcinogen and that was the evidence</p> <p>15 that was presented. I don't know any specifics.</p> <p>16 Q As you sit here today you don't know what</p> <p>17 evidence was provided or not provided to the</p> <p>18 National Toxicology Project concerning whether there</p> <p>19 was asbestos in Johnson's Baby Powder at any point</p> <p>20 in time. Is that fair?</p> <p>21 A I don't know specific studies presented,</p> <p>22 no.</p> <p>23 MR. PLACITELLA: Mark this as</p> <p>24 Musco-4.</p> <p>25 (The above document is marked</p>	<p style="text-align: right;">Page 204</p> <p>1 CROSS EXAMINATION BY MS. O'CONNOR:</p> <p>2 Q Good afternoon, Ms. Musco, we know each</p> <p>3 other. I'm Kathy O'Connor and I would like to ask</p> <p>4 you a few questions.</p> <p>5 So we have been here for a while, but</p> <p>6 I would like to know a little bit more about you and</p> <p>7 your background. Where did you grow up?</p> <p>8 A I grew up in New Jersey.</p> <p>9 Q Where in New Jersey grow up?</p> <p>10 A Bergen County, North Arlington.</p> <p>11 Q Did you go to high School?</p> <p>12 A Yes, Queen of Peace on North Arlington.</p> <p>13 Q Let's do that again. Where did you go to</p> <p>14 high school?</p> <p>15 A Queen of Peace High School in North</p> <p>16 Arlington.</p> <p>17 Q Did you work or volunteer when you were in</p> <p>18 high school?</p> <p>19 A Yes. I was a candy striper pretty much in</p> <p>20 my second year of high school all the way through.</p> <p>21 Q What is a candy striper? I know what</p> <p>22 those are, but not everyone does.</p> <p>23 A A candy striper is a volunteer in a</p> <p>24 hospital. It got their name from the striped</p> <p>25 pinafore we used to wear.</p>



Page 205	Page 207
<p>1 These are volunteers who assist with</p> <p>2 giving patient mail, giving out visiting cards, et</p> <p>3 cetera, in a hospital.</p> <p>4 Q Why did you volunteer as a candy striper?</p> <p>5 A Because I wanted to be a nurse. I</p> <p>6 couldn't wait to get in the hospital.</p> <p>7 Q Why did you want to be a nurse?</p> <p>8 A I wanted to be a nurse ever since I was</p> <p>9 about three years old. A friend had given us, or</p> <p>10 given me a nurse's uniform complete with cape and</p> <p>11 cap. I thought it was the greatest thing in the</p> <p>12 world. I wanted to be the one who knew what to do</p> <p>13 in an emergency.</p> <p>14 Q Did you graduate high school and go on to</p> <p>15 study nursing?</p> <p>16 A Yes. I graduated high school and I went</p> <p>17 to the University of Bridgeport in Connecticut.</p> <p>18 Q Did you major in nursing?</p> <p>19 A I majored in nursing.</p> <p>20 Q Did you work while you were in college?</p> <p>21 A Yes. I worked as an LPN, a licensed the</p> <p>22 practical nurse. At that time after a year, year</p> <p>23 and a half of nursing study you could take your</p> <p>24 practical nurse test, which I did, and I passed.</p> <p>25 So I was able to work in the summers</p>	<p>1 not a burn new unit at the time, but there was going</p> <p>2 to be one. So I wanted to be able to be in the</p> <p>3 hospital.</p> <p>4 I first worked in orthopedics and</p> <p>5 then I worked in cardiac care. After a little while</p> <p>6 we were able to start our intensive training and I</p> <p>7 was one of the first, or one of the ten first nurses</p> <p>8 to open the burn unit.</p> <p>9 Q What were your responsibilities as a nurse</p> <p>10 in the burn unit?</p> <p>11 A Everything and anything. We were</p> <p>12 responsible pretty much one on one to the patients</p> <p>13 for their entire care, physical and emotional,</p> <p>14 educational.</p> <p>15 There was a lot to be done because</p> <p>16 the patients were with us for an average of probably</p> <p>17 two months. So we not only had to care for them</p> <p>18 in during the intensive period, but we had to</p> <p>19 prepare them to go home, educate their families.</p> <p>20 I started the burn clinic in an</p> <p>21 educational program. Sometimes we will go out to</p> <p>22 different groups in the area. If a child had been</p> <p>23 burned, sometimes I went to their school and taught</p> <p>24 his or her classmates what to expect when the child</p> <p>25 came back. A lot of teaching involved.</p>
Page 206	Page 208
<p>1 as a licensed practical nurse. I worked in</p> <p>2 Riverview Hospital in Red Bank. Then I also worked</p> <p>3 in Hackensack Hospital in Hackensack, New Jersey.</p> <p>4 Q What types of patients did you work with</p> <p>5 while you were an LPN in college?</p> <p>6 A I took care of a myriad of different</p> <p>7 patients. What really stuck out in my mind was in</p> <p>8 Hackensack there was an explosion nearby and the</p> <p>9 hospital received a lot of burn victims.</p> <p>10 They were looking for volunteers to</p> <p>11 help take care of them. So I was interested. This</p> <p>12 will be interesting. I volunteered to take care of</p> <p>13 one of the patients.</p> <p>14 Q What did you find interesting about</p> <p>15 working with burn patients?</p> <p>16 A It was the ultimate challenge for me.</p> <p>17 That actually sparked my interest in nursing. I</p> <p>18 knew that's what I wanted to do because it involved</p> <p>19 the entire body, every system, everything could go</p> <p>20 wrong.</p> <p>21 Q Did you go on to become a nurse in a burn</p> <p>22 unit?</p> <p>23 A Yes. After I graduated and passed my</p> <p>24 registered nurse license, I went to St. Barnabas</p> <p>25 Medical Center in Livingston, New Jersey. There was</p>	<p>1 Q When you said you participated in</p> <p>2 education, was it just the patient, did it involve</p> <p>3 the family?</p> <p>4 A The entire process. Again, because the</p> <p>5 patients were with us so long, and it was such a</p> <p>6 catastrophic trauma that happened to them, their</p> <p>7 entire family was involved and affected.</p> <p>8 So we were educating both the</p> <p>9 patients themselves and the family and the care of</p> <p>10 the patient and what to expect.</p> <p>11 Q For how long were you a burn unit nurse?</p> <p>12 A About seven years all together.</p> <p>13 Q At some point you stopped being a burn</p> <p>14 unit nurse. Why did you do that?</p> <p>15 A It is a lot to do emotionally.</p> <p>16 Q What does that mean?</p> <p>17 A I think it is one of the worse things that</p> <p>18 can happen to a human being because it involves not</p> <p>19 only the physical trauma, but the emotional trauma</p> <p>20 because it reflects how they look to the world, and</p> <p>21 with the one on one, we as nurses, bore a lot of</p> <p>22 those emotions for the patients.</p> <p>23 We had to hurt them in order to make</p> <p>24 them better, and that's not something you can do</p> <p>25 easily day after day. It was time for me to change.</p>



<p style="text-align: right;">Page 209</p> <p>1 Q Time for you to change. What did you 2 decide to do?</p> <p>3 A Well, because I thought working in the 4 burn unit to me was the ultimate in patient care in 5 a hospital, I decided to look outside.</p> <p>6 I enjoyed the teaching part so much. 7 I liked teaching my patients. I wanted to continued 8 that in some form or another.</p> <p>9 Q Did you continue to teach people in some 10 form after you left the burn unit?</p> <p>11 A Yes. I was lucky enough to earn a 12 position at Johnson and Johnson, Johnson's Baby 13 Products at the time, where I was responsible for 14 speaking to consumers, which were mainly new 15 parents.</p> <p>16 I not only talked to them about the 17 products, but got to talk to them about how to care 18 for their there babies?</p> <p>19 Q What made you choose Johnson and Johnson?</p> <p>20 A From New Jersey, and Johnson and Johnson 21 is one of the most respected companies in the world, 22 and certainly in our area. In fact, to be honest, I 23 didn't even first look at Johnson and Johnson 24 because I thought they were too special and maybe 25 they wouldn't hire me, but it definitely is one</p>	<p style="text-align: right;">Page 211</p> <p>1 responsible for seven counties in New Jersey, 2 Central New Jersey. You can imagine it is a wide 3 spread area.</p> <p>4 We get them from a lot of domestic 5 violence centers, we get them from the county 6 unemployment and we also get them from homeless 7 shelters.</p> <p>8 Q What kind of work do you do with them?</p> <p>9 A Helping them find their goals, where they 10 need to go in life, helping them identify their 11 journey and what they would like to accomplish so 12 they could get meaningful employment.</p> <p>13 Q How do you help them identify their goals?</p> <p>14 A One of the biggest things I do is I lead a 15 program called Designing Your Future, which is a 16 nine week program where we meet weekly. We start 17 off with goals and objective and we discuss 18 emotional intelligence, healthy living as well as 19 resumes and interviewing.</p> <p>20 Q Do any of your clients go on to work in 21 nursing?</p> <p>22 A Yes. As a matter of fact, I recently had 23 a client and one of the things I was asking the 24 first day is if they could be anything they wanted 25 to be, never mind money, education, location, or</p>
<p style="text-align: right;">Page 210</p> <p>1 of the best.</p> <p>2 My brother had worked there. I just 3 knew it was one of the best companies to work with.</p> <p>4 Q How long did you work at Johnson and 5 Johnson?</p> <p>6 A Thirty years.</p> <p>7 Q When did you leave?</p> <p>8 A 2012.</p> <p>9 Q Why did you leave?</p> <p>10 A We were downsizing, departments were 11 changing and I'm now officially retired.</p> <p>12 Q So now that you are officially retired, 13 what do you do to fill your days?</p> <p>14 A I work for Dress for Success in Central 15 New Jersey. I'm a program manager.</p> <p>16 Q And what does a program manager do?</p> <p>17 A Well, Dress for Success not only provides 18 clothes for people, but we provide a network of 19 support and job development and life skill workshops 20 for woman who are unemployed. I'm the one who 21 designs and facilitates the workshops.</p> <p>22 Q How do you get your clients at Dress for 23 Success? Where do they come from?</p> <p>24 A All our clients are referred to us from 25 the many social agencies in the area. We are</p>	<p style="text-align: right;">Page 212</p> <p>1 whatever, what would they be.</p> <p>2 Sometimes I get some crazy things. 3 This one particular woman said she wanted to be a 4 nurse. I said I'm a nurse. We will have to talk.</p> <p>5 She said to me actually, I want to be 6 a burn nurse. I situated that's pretty specific.</p> <p>7 Q Did she know you were a burn nurse?.</p> <p>8 A She didn't even know I was a nurse was a 9 pretty specific thing to say. I said we have to 10 talk.</p> <p>11 I went up to her on a break. We 12 started talking. I'm going to get the chills every 13 time I talk about this. It turns out when she was 14 three years old she had been severely burned by 15 accidentally pulling a pot of boiling water over on 16 herself. Her parents were not paying attention to 17 her. She had a rough life.</p> <p>18 She was severely burned and she was 19 taken to St. Barnabas. When I told her what I did, 20 she started crying, I started crying. She said she 21 has been looking to thank the nurses who saved her 22 life. Quite a story. I went on to mentor her. We 23 worked very close.</p> <p>24 She now has her high school diploma 25 She didn't at the time. She got out of her domestic</p>

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<p>1 violence situation and in January she starts her</p> <p>2 nursing course.</p> <p>3 Q That's a remarkable story. Do you have</p> <p>4 children of your own?</p> <p>5 A Two children, a boy and a girl. They are</p> <p>6 all grown now.</p> <p>7 Q Mr. Placitella asked you a lot of</p> <p>8 questions about the safety of Johnson's Baby Powder</p> <p>9 with talc. Did you ever use Johnson's Baby powder</p> <p>10 with talc in your house?</p> <p>11 A I used it on both my children. I even</p> <p>12 used it on my elderly mother and from time to time</p> <p>13 used it on myself.</p> <p>14 Q Do you still believe in the safety of</p> <p>15 Johnson's Baby Powder with talc?</p> <p>16 A Absolutely. We use Johnson's Baby Powder</p> <p>17 with talc. It's safe.</p> <p>18 Q Thank you for your time.</p> <p>19 THE VIDEOGRAPHER: The time is now</p> <p>20 5:12 p m. We are off the record.</p> <p>21 THE VIDEOGRAPHER: The time is now</p> <p>22 5:13 p m. We are back on the record.</p> <p>23</p> <p>24</p> <p>25</p>	<p>1 people trusted. Is that fair?</p> <p>2 A Yes.</p> <p>3 Q You were one of those kinds of people?</p> <p>4 A I hope so.</p> <p>5 Q When they had you go out and speak to</p> <p>6 people, they kind of knew that about you, that you</p> <p>7 were one of those people that people kind of liked</p> <p>8 and would trust if they told them something about</p> <p>9 the product. Is that fair?</p> <p>10 MS. O'CONNOR: Objection to the form.</p> <p>11 You can answer.</p> <p>12 A Again, I hope people do trust me, yes.</p> <p>13 Q So if you were given information about the</p> <p>14 product, the information that you are providing is</p> <p>15 only as good as the information that had been</p> <p>16 provided to you, correct?</p> <p>17 A Yes. From our scientists I believe and</p> <p>18 trust their expertise, yes.</p> <p>19 Q And while you were there, even though you</p> <p>20 were in charge of communicating with the public</p> <p>21 about Johnson and Johnson's Baby Powder, no one ever</p> <p>22 told you about any of the tests where they found</p> <p>23 asbestos in the mines that were the source of</p> <p>24 Johnson' Baby Powder, correct?</p> <p>25 MS. O'CONNOR: Objection to the form</p>
Page 214	Page 216
<p>1 REDIRECT EXAMINATION BY MR. PLACITELLA:</p> <p>2 Q A couple of questions. One, thank you for</p> <p>3 your kindness.</p> <p>4 A You're welcome.</p> <p>5 Q I'm assuming that your kids and your mon</p> <p>6 are all healthy and they don't suffer any ill</p> <p>7 effects at this point?</p> <p>8 A My children are very healthy. My mother</p> <p>9 is deceased now. She died when she was 99.</p> <p>10 Q Oh, great. So you've got good genes. You</p> <p>11 tried to do the best job you could when you were at</p> <p>12 Johnson and Johnson. Is that fair?</p> <p>13 A Absolutely.</p> <p>14 Q And because you were the person dealing</p> <p>15 with the public, your ability to do your job</p> <p>16 correctly and appropriately was only as good as the</p> <p>17 information that you were provided about the</p> <p>18 products. Is that fair?</p> <p>19 A Partly, but I think that I also was able</p> <p>20 to do a good job because I was able to draw on my</p> <p>21 nursing experience. That was part of why I was</p> <p>22 hired. I had the ability to speak to people. Again,</p> <p>23 meet them where they are in a way they could understand.</p> <p>24 Q I understand. Part of it was you were the</p> <p>25 kind of person that Johnson and Johnson believed</p>	<p>1 of the question. You can answer.</p> <p>2 A What I do know is there's no asbestos in</p> <p>3 Johnson's Baby Powder.</p> <p>4 Q That wasn't my question, Ma'am, with all</p> <p>5 due respect. When you were making the statements,</p> <p>6 no one at Johnson and Johnson ever told you anything</p> <p>7 about any of the tests where asbestos was found in</p> <p>8 the mines that were the source of the Johnson's Baby</p> <p>9 Powder, correct?</p> <p>10 MS. O'CONNOR: Objection to the form.</p> <p>11 You can answer.</p> <p>12 A I'm not familiar with any of those tests.</p> <p>13 Q No one ever told you?</p> <p>14 MS. O'CONNOR: Objection.</p> <p>15 A I'm not familiar.</p> <p>16 Q And can you put your plant on that black</p> <p>17 book right there. And no one ever told you about</p> <p>18 any of the tests that were in that block book,</p> <p>19 right?</p> <p>20 MS. O'CONNOR: Objection to the form.</p> <p>21 You may answer.</p> <p>22 A I've not seen these, no.</p> <p>23 Q Although you met with your attorney for</p> <p>24 almost twelve hours, your attorney never showed you</p> <p>25 any of the tests in that black book, correct?</p>

<p style="text-align: right;">Page 217</p> <p>1 MS. O'CONNOR: Objection to the form.</p> <p>2 A Yes, that is correct .</p> <p>3 Q Johnson and Johnson trusted you. Is that</p> <p>4 fair?</p> <p>5 A I would like to think that, yes.</p> <p>6 Q And you trusted Johnson and Johnson?</p> <p>7 A Absolutely.</p> <p>8 Q And you tried to convince people to trust</p> <p>9 Johnson and Johnson?</p> <p>10 MS. O'CONNOR: Objection to the form.</p> <p>11 You may answer.</p> <p>12 A I trusted the company and tried to convey</p> <p>13 their trust, yes.</p> <p>14 Q And whether that trust was justified or</p> <p>15 not only goes so far as to whether the information</p> <p>16 that you were provided was true and accurate in all</p> <p>17 respects, correct?</p> <p>18 A I believe that trust was deserved.</p> <p>19 Q It only went so far as the</p> <p>20 information you were providing was true, complete</p> <p>21 and accurate in all respects, correct?</p> <p>22 MS. O'CONNOR: Objection to the form.</p> <p>23 A Trust is based on information, but it is</p> <p>24 also based on reputation. It is a company made up</p> <p>25 of people.</p>	<p style="text-align: right;">Page 219</p> <p>1 are going off the record.</p> <p>2 (The deposition is concluded.)</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>
<p style="text-align: right;">Page 218</p> <p>1 Q And there are very good people at Johnson</p> <p>2 and Johnson, right?</p> <p>3 A Absolutely.</p> <p>4 Q But there are people who had discussions</p> <p>5 about the powder, the baby powder, as we saw in the</p> <p>6 documents during the course of this deposition that</p> <p>7 they didn't even tell you about, and you were the</p> <p>8 person in charge of going and talking to the public,</p> <p>9 right?</p> <p>10 MS. O'CONNOR: Objection to the form.</p> <p>11 Vague and ambiguous. Over broad.</p> <p>12 A I didn't see every document, no.</p> <p>13 Q And they had discussions outside of your</p> <p>14 presence about the dangers or problems associated</p> <p>15 with baby powder and those were never communicated</p> <p>16 to you as the person who was in charge of dealing</p> <p>17 with the public as it relates to baby powder, right?</p> <p>18 MS. O'CONNOR: Same objection.</p> <p>19 Compound, vague, ambiguous. You can answer.</p> <p>20 A There may have been conversations that I</p> <p>21 was not privy to, yes.</p> <p>22 Q That's all the questions I have. Thank</p> <p>23 you.</p> <p>24 THE VIDEOGRAPHER: The time is now</p> <p>25 5:19 p m. and this concludes today's deposition. We</p>	<p style="text-align: right;">Page 220</p> <p>1 C E R T I F I C A T E</p> <p>2</p> <p>3 I, MARC BRODY, Notary Public and</p> <p>4 Certified Shorthand Reporter of the State</p> <p>5 of New Jersey, do hereby certify that prior</p> <p>6 to the commencement of the examination</p> <p>7 the witness was duly sworn by me to</p> <p>8 testify the truth, the whole truth and</p> <p>9 nothing but the truth.</p> <p>10 I DO FURTHER CERTIFY that the</p> <p>11 foregoing is a true and accurate transcript</p> <p>12 of the testimony as taken stenographically</p> <p>13 by and before me at the time, place and on</p> <p>14 the date hereinbefore set forth.</p> <p>15 I DO FURTHER CERTIFY that I am neither</p> <p>16 a relative of nor employee nor attorney nor</p> <p>17 counsel for any of the parties to this</p> <p>18 action, and that I am neither a relative</p> <p>19 nor employee of such attorney or counsel,</p> <p>20 and that I am not financially interested in</p> <p>21 the action.</p> <p>22</p> <p>23</p> <p>24 Notary Public of the State of New Jersey</p> <p>25</p>

# Exhibit 21

UNITED STATES BANKRUPTCY COURT  
WESTERN DISTRICT OF NORTH CAROLINA  
CHARLOTTE DIVISION

IN RE: : Case No. 21-30589-JCW

LTL MANAGEMENT LLC, : Chapter 11

Debtor, : Charlotte, North Carolina

: Friday, November 5, 2021

: 9:04 a.m.

[illegible]

LTL MANAGEMENT LLC, : AP 21-03032-JCW

Plaintiff, :

10	v.	:
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11 THOSE PARTIES LISTED ON :  
 12 APPENDIX A TO COMPLAINT and :  
 JOHN AND JANE DOES 1-1000, :

13 Defendants. :

[illegible]

## VOLUME 2

TRANSCRIPT OF PROCEEDINGS  
BEFORE THE HONORABLE J. CRAIG WHITLEY,  
UNITED STATES BANKRUPTCY JUDGE

19	Audio Operator:	COURT PERSONNEL
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21	Transcript prepared by:	JANICE RUSSELL TRANSCRIPTS
		1418 Red Fox Circle
		Severance, CO 80550
22		(757) 422-9089
		trussell31@tdsmail.com

24 | Proceedings recorded by electronic sound recording; transcript  
produced by transcription service.

1 APPEARANCES:

2 For the Debtor/Plaintiff:

Jones Day

BY: GREGORY M. GORDON, ESQ.

DAN B. PRIETO, ESQ.

2727 North Harwood St., Suite 500

Dallas, TX 75201-1515

Jones Day

BY: ROBERT W. HAMILTON, ESQ.

325 John H. McConnell Blvd., #600

Columbus, Ohio 43215

Jones Day

BY: JAMES M. JONES, ESQ.

250 Vesey Street

New York, NY 10281

Rayburn Cooper & Durham, P.C.

BY: JOHN R. MILLER, JR., ESQ.

227 West Trade Street, Suite 1200

Charlotte, NC 28202

12 For Johnson & Johnson and  
13 Johnson & Johnson Consumer  
14 Inc.:

Moore & Van Allen PLLC

BY: HILLARY B. CRABTREE, ESQ.

100 N. Tryon Street, Suite 4700

Charlotte, NC 28202

White & Case LLP

BY: JESSICA LAURIA, ESQ.

1221 Avenue of the Americas

New York, NY 10020

White & Case LLP

BY: LAURA FEMINO, ESQ.

Southeast Financial Center

Miami, FL 33131-2352

20 For The Continental  
21 Insurance Company:

Parker Poe

BY: ASHLEY A. EDWARDS, ESQ.

PHILLIP M. FAJGENBAUM, ESQ.

620 South Tryon Street, Suite 800

Charlotte, NC 28202

23 For Certain Victims:

Burns Charest LLP

BY: DANIEL H. CHAREST, ESQ.

900 Jackson Street, Suite 500

Dallas, TX 75202

25



1 APPEARANCES (continued):

2 For Imerys Talc America, Blanco Tackabery  
3 Inc., Imerys Talc Canada, BY: ASHLEY S. RUSHER, ESQ.  
4 Inc., and Imerys Talc Vermont, 404 North Marshall Street  
5 Inc.: Winston-Salem, NC 27101

6 For Blue Cross Blue Shield Cordes Law, PLLC  
7 of Massachusetts, Inc.: BY STACY C. CORDES, ESQ.  
8 1800 East Boulevard  
9 Charlotte, NC 28203

10 Hill, Hill, Carter  
11 BY: ELIZABETH B. CARTER, ESQ.  
12 425 South Perry Street  
13 Montgomery, AL 36104

14 For The Plaintiffs' Steering COLE HAYES, ESQ.  
15 Committee: 601 S. Kings Dr., Ste. F PMB #411  
16 Charlotte, NC 28204

17 Otterbourg P.C.  
18 BY: ADAM C. SILVERSTEIN, ESQ.  
19 MELANIE L. CYGANOWSKI, ESQ.  
20 230 Park Avenue  
21 New York, NY 10169

22 Levin Papantonio Rafferty  
23 BY: CHRISTOPHER V. TISI, ESQ.  
24 316 Baylen Street  
25 Pensacola, FL 32502

For Certain Claimants: Essex Richards, P.A.  
BY: JOHN C. WOODMAN, ESQ.  
1701 South Boulevard  
Charlotte, NC 28203

Kazan McClain  
BY: JOSEPH SATTERLEY, ESQ.  
55 Harrison Street, Suite 400  
Oakland, CA 94607

Fears Nachawati PLLC  
BY: DARREN P. McDOWELL, ESQ.  
NABIL MAJED NACHAWATI II, ESQ.  
5489 Blair Road  
Dallas, TX 75231

1 APPEARANCES (continued):

2 For Maune Raichle, et al.: Waldrep Wall  
3 BY: THOMAS W. WALDREP, JR., ESQ.  
4 KEVIN L. SINK, ESQ.  
5 JENNIFER B. LYDAY, ESQ.  
6 370 Knollwood Street, Suite 600  
7 Winston-Salem, NC 27103

8 For Certain Talc Claimants: Hamilton Stephens  
9 BY: ROBERT A. COX, JR., ESQ.  
10 525 North Tryon Street, Ste. 1400  
11 Charlotte, NC 28202

12 Robinson Calcagnie, Inc.  
13 BY: MARK P. ROBINSON, JR., ESQ.  
14 19 Corporate Plaza Drive  
15 Newport Beach, CA 92660

16 For Margaret Watson: Hamilton Stephens  
17 BY: GLENN C. THOMPSON, ESQ.  
18 525 North Tryon Street, Ste. 1400  
19 Charlotte, NC 28202

20 For Aylstock Witkin, etc.: Offit Kurman  
21 BY: PAUL BAYNARD, ESQ.  
22 301 South College St., Suite 2600  
23 Charlotte, NC 28202

24 KTBS Law LLP  
25 BY: ROBERT J. PFISTER, ESQ.  
1801 Century Park East  
Los Angeles, CA 90067-2328

For Arnold & Itkin: Moon Wright & Houston PLLC  
BY: ANDREW T. HOUSTON, ESQ.  
121 West Trade Street, Suite 1950  
Charlotte, NC 28202

For Various Plaintiffs: Meirowitz & Wasserberg, LLP  
BY: KUSH SHUKLA, ESQ.  
535 Fifth Ave, 23rd Floor  
New York, NY 10017

For Aleathea Goodins: D. Miller & Associates, PLLC  
BY: ROCHELLE GUITON, ESQ.  
2610 W. Sam Houston Pkwy. S #200  
Houston, TX 77042

25

1 APPEARANCES (continued):

2 For OnderLaw, LLC:

Parkins Lee & Rubio LLP  
BY: LENARD M. PARKINS, ESQ.  
CHARLES M. RUBIO, ESQ.  
700 Milam Street, Suite 1300  
Houston, TX 77002

5 J. C. WHITE LAW GROUP PLLC  
BY: JAMES C. WHITE, ESQ.  
100 Europa Drive, Suite 401  
Chapel Hill, NC 27517

7 For Travelers Casualty &  
8 Surety Company:

FisherBroyles LLP  
BY: DEBORAH L. FLETCHER, ESQ.  
338 Sharon Amity Road, #518  
Charlotte, NC 28211

10 For Certain Claimants:

Andrews Myers, P.C.  
BY: LISA M. NORMAN, ESQ.  
1885 Saint James Place, 15th Flr.  
Houston, TX 77056

12 The Layton Law Firm, PLLC  
13 BY: CHRISTOPHER D. LAYTON, ESQ.  
2701 Coltsgate Road, Suite 210  
14 Charlotte, NC 28211

15 For Certain Insurers:

Katten Muchin Rosenman LLP  
BY: KATHERINE A. SCHERLING, ESQ.  
575 Madison Avenue  
New York, NY 10022-2585

17 Ward and Smith, P.A.  
18 BY: PAUL A. FANNING, ESQ.  
Post Office Box 2020  
19 Asheville, NC 28802-2020

20 For Kristie Doyle:

JD Thompson Law  
BY: LINDA SIMPSON, ESQ.  
Box 33127  
Charlotte, NC 28233

22 For Certain Claimants:

Cohen, Placitella & Roth, P.C.  
23 BY: CHRISTOPHER PLACITELLA, ESQ.  
127 Maple Avenue  
24 Red Bank, NJ 07701

25

1 APPEARANCES (continued):

2 For Sue Sommer-Kresse:

Higgins & Owens, PLLC  
BY: Sara (Sally) Higgins, ESQ.  
524 East Boulevard  
Charlotte, NC 28209

4

5

Motley Rice, LLC  
BY: NATHAN D. FINCH, ESQ.  
401 9th St., NW Suite 1001  
Washington, D.C. 20009

6

7

Motley Rice, LLC  
BY: DANIEL LAPINSKI, ESQ.  
210 Lake Drive East Suite 101  
Cherry Hill, NJ 08002

8

9

10 For Brandi Carl:

Golomb Spirt Grunfield  
BY: RICHARD M. GOLOMB, ESQ.  
1835 Market Street, Suite 2900  
Philadelphia, PA 19103

11

12 For Certain Claimants:

Levy Konigsberg LLP  
BY: JEROME BLOCK, ESQ.  
605 Third Avenue, 33rd Floor  
New York, NY 10158

13

14

15 ALSO PRESENT:

SHELLEY K. ABEL  
Bankruptcy Administrator  
402 West Trade Street, Suite 200  
Charlotte, NC 28202

16

17

18 APPEARANCES (via telephone):

19 For The Continental  
20 Insurance Company:

DAVID CHRISTIAN, ESQ.  
3515 West 75th Street, Suite 208  
Prairie Village, KS 66208

21

22

Clyde & Co US LLP  
BY: CLINTON CAMERON, ESQ.  
55 West Monroe Street, Suite 3000  
Chicago, IL 60603

23

24

25

1 APPEARANCES (via telephone continued):

2 For Arnold & Itkin: Pachulski Stang Ziehl & Jones  
3 BY: LAURA DAVIS JONES, ESQ.  
4 919 North Market St., 17th Floor  
5 Wilmington, DE 19801

6 Pachulski Stang Ziehl & Jones  
7 BY KAREN B. DINE, ESQ.  
8 780 Third Avenue, 34th Floor  
9 New York, NY 10017-2024

10 For Certain Insurers: Mendes & Mount LLP  
11 BY EILEEN T. McCABE, ESQ.  
12 STEPHEN T. ROBERTS, ESQ.  
13 750 Seventh Avenue  
14 New York, NY 10019

15 For the State of Texas: Office of Texas Attorney General  
16 BY: AUTUMN D. HIGHSMITH, ESQ.  
17 P. O. Box 12548 MC008  
18 Austin, TX 78711-2548

19 For Bausch Health: Simpson Thacher & Bartlett LLP  
20 BY: SANDEEP QUSBA, ESQ.  
21 425 Lexington Avenue  
22 New York, NY 10017

23 For Cyprus Mines Corporation: Northen Blue LLP  
24 BY: VICKI L. PARROTT, ESQ.  
25 1414 Raleigh Road, Suite 435  
Chapel Hill, NC 27517

Kasowitz Benson Torres LLP  
BY: MICHAEL E. HUTCHINS, ESQ.  
1230 Peachtree St., NE, Ste. 2445  
Atlanta, GA 30309

Reed Smith LLP  
BY: PAUL M. SINGER, ESQ.  
225 Fifth Avenue  
Pittsburgh, PA 15222-2716

23 For Westchester Fire Insurance Company: Manier & Herod, P.C.  
24 BY: ROBERT W. MILLER, ESQ.  
25 1201 Demonbreun St., Suite 900  
Nashville, TN 37203

1 APPEARANCES (via telephone continued):

2 For Rio Tinto America Inc. Nexsen Pruet, PLLC  
3 and Three Crowns Insurance BY: HARRIS M. WATKINS, ESQ.  
Company: P. O. Box 3463  
Greensboro, NC 27402

4  
5 WilmerHale  
6 BY: DANIELLE SPINELLI, ESQ.  
1875 Pennsylvania Avenue, NW  
Washington, DC 20006

7 For Employers Insurance The Shapiro Law Firm  
8 Company of Wausau, et al.: BY: JANET A. SHAPIRO, ESQ.  
325 N. Maple Drive, #15186  
Beverly Hills, CA 90209

9  
10 For Certain Claimants: Blossom Law PLLC  
11 BY: RASHAD BLOSSOM, ESQ.  
301 S. McDowell St., Suite 1103  
Charlotte, NC 28204

12 For Barnes Law Group JD Thompson Law  
13 Plaintiffs: BY: JUDY THOMPSON, ESQ.  
Box 33127  
Charlotte, NC 28233

14  
15 For Imerys Talc America, Latham & Watkins LLP  
16 Inc., Imerys Talc Canada, BY: KIMBERLY A. POSIN, ESQ.  
Inc., and Imerys Talc Vermont, JEFFREY E. BJORK, ESQ.  
Inc.: 355 South Grand Avenue, Suite 100  
Los Angeles, CA 90071-1560

17  
18 For Travelers Casualty & Simpson Thacher & Bartlett LLP  
Surety Company: BY: ANDREW T. FRANKEL, ESQ.  
KATHRINE A. McLENDON, ESQ.  
19 425 Lexington Avenue  
20 New York, NY 10017

21

22

23

24

25



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KUFFNER - CROSS

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1 Dr. Waldstreicher just said in that video, do you?

2 A No, I absolutely agree with it.

3 Q Okay. All right. Let me just go to one last thing before

4 I turn, turn the questioning over to my colleagues.

5 Last Saturday when we spoke, we talked about what you can  
6 and cannot testify to from firsthand knowledge, do you remember  
7 those questions?

8 A I do remember that.

9 Q Okay. And just to refresh the record here on this, you  
10 began as Chief Medical Officer in 2017, true?

11 A Correct.

12 Q But the issue of talc safety and, in particular, talc and  
13 ovarian cancer, was an issue that, that preceded your tenure as  
14 Chief Medical Officer by decades, true?

15 A Correct.

16 Q And you would agree for at least a half century before you  
17 became CMO for Old JJCI in 2017 there were questions raised in  
18 the medical and scientific community about the safety of talcum  
19 powder, true?

20 A Yes.

21 Q Okay. And there really were, primarily, two issues we've  
22 talked about over the past couple days, whether or not talc  
23 used by women and whatever is in that bottle, including  
24 asbestos, can cause ovarian cancer, true?

25 A That's one of the allegations, yes.

# Exhibit 22

# **TOXIC SUBSTANCES CONTROL ACT OF 1973**

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**HEARINGS**  
BEFORE THE  
**ENVIRONMENT SUBCOMMITTEE**  
OF THE  
**COMMITTEE ON COMMERCE**  
**UNITED STATES SENATE**  
**NINETY-THIRD CONGRESS**

FIRST SESSION

ON

**S. 426 and Amendments 1, 8, and 9**

TO REGULATE INTERSTATE COMMERCE BY REQUIRING PRE-  
MARKET TESTING OF NEW CHEMICAL SUBSTANCES AND TO  
PROVIDE FOR SCREENING OF THE RESULTS OF SUCH TEST-  
ING PRIOR TO COMMERCIAL PRODUCTION, TO REQUIRE  
TESTING OF CERTAIN EXISTING CHEMICAL SUBSTANCES, TO  
AUTHORIZE THE REGULATION OF THE USE AND DIS-  
TRIBUTION OF CHEMICAL SUBSTANCES, AND FOR OTHER  
PURPOSES

**S. 888**

TO BE KNOWN AS THE TOXIC SUBSTANCES CONTROL  
ACT OF 1973

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FEBRUARY 23, 26, AND MARCH 21, 1973

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Serial No. 93-18

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(II)

and flaking. The atmosphere of the working space can easily be contaminated by asbestos. For other groups, see Table III.

One unsuspected source of asbestos is in talcs which contain varying amounts of tremolite asbestos. Talcs are soft and can be reduced to small particle size; they are cheap and are good thermal and electrical conductors and, like asbestos, are resistant to attack by acids and bases. These properties allow for a multiplicity of uses (see Table IV) ranging from fillers in scouring soaps to solid lubricants.

Blejer (130) has called attention to the potential cancer hazard posed by the strong chemical similarity between talc and asbestos, and has also written to one of the authors that many mineralogists doubt if such a thing as an asbestos-free talc deposit exists. This latter complication has so far prevented the appearance of a study of cancer incidence of workers exposed to pure talc. Talc miners who work with a talc containing about 80% tremolite risk developing a talc fibrosis similar to asbestosis and incur four times as much cancer of the lung and pleura as their counterparts in the general population (131).

A few mineralogical analyses have been made on talcs used in these many items. A study by Schulz and Williams on 51 commercial talcs indicated a range of 0 to 82% tremolite with greater than trace amounts in 17, or one third (115). This alarming report beckons a thorough analysis of all uses of talcs. Some of the area which requires immediate investigation should be in talcum powders and vaginal deodorants. Here large quantities of talc which could contain different amounts of asbestos can be easily administered to prime cancer sites.

Among talc uses which should be strictly controlled include the use as lubricants in the interior walls of balloons, where children naturally inhale and exhale the air used to inflate the item. Recent analyses of a limited number of brand by the Food and Drug Administration revealed no asbestos in the talc. However, strict regulations on talc use are still needed with an active program of surveillance.

A recently discovered serious contamination problem is in the area of coats imported from Italy which contain asbestos mixed with wool. This was detected because the coats were declared to contain asbestos in order to escape the wool duty. Before the public was alerted in 1971, there was an estimated 100,000 coats sold to women in this country. A measurement of air concentrations near lightly brushed coats were 10,000 times more asbestos than normal background (132).

#### ASBESTOS IN FOOD, DRINKS, AND DRUGS

Though asbestos is not directly added to human foods, still it is able to contaminate them through careless and thoughtless practices. One such practice is the polishing of rice by the use of talcs. Talc is also used as a dusting powder for salami and a polishing medium for peanuts (128). Merliss believes that since much of the polished rice eventually is exported to Japan, this might be a reason why there is a very high incidence of stomach cancer in that country (133). While this inference was highly questioned in recent months, Merliss' report eventually led the Food and Drug Administration to propose a ban on asbestos-containing talc as a polishing agent (see Appendix 2).

A use of asbestos which causes considerable worry is the use of asbestos filters for beer, wine, and hard liquors. This allows for small fibers to be washed into the final product and find their way into the stomachs of drinkers. One of the authors spoke with the chief engineer at a Carling brewery and informed him of the hazardous potential of asbestos to workers and the public. The company immediately procured a cellulose substitute from Grefco, Incorporated, which had also furnished the asbestos-containing filter material. Asbestos filter media are widely used in United States breweries, and at this time a number of companies are switching to substitutes voluntarily in order to preempt government regulation and adverse publicity.

The above experience supports the claim that the resistant properties and low cost of asbestos lead to widespread, nonessential uses which can be readily substituted and eliminated.

Asbestos-containing filters are also used by some manufacturers of gin. Representatives of Seagrams, one of whose products is Calvert gin, maintain that asbestos has unique filtration properties and the company is seeking other materials which can produce satisfactory clarity in their product. Electron microscopist Henry Wehman found greater concentrations of asbestos fibers in



(n) require adequate wetting to lay dust in demolition of buildings containing asbestos;

(o) prohibit the use of asbestos cement pipe in metropolitan water supply systems.

What can you do as an individual concerned citizen? Now that you know that asbestos is used in a multitude of products, many of which are not labeled, beware of any product which could conceivably contain friable asbestos fibers. If you suspect that a product in a hardware store contains asbestos, read the label, ask the salesman, and (if necessary) write to the manufacturer. Ask your local hardware dealer to remove asbestos dust from the shelf.

Check pipe and boiler insulation in your home and see that the surface is not broken. You can buy resin-impregnated cloth to wrap the pipe insulation. Replace torn ironingboard covers and buy them (asbestos waste can otherwise find its way into the air via a municipal incinerator). Likewise, bury any imported coats purchased in 1970-71 which contains asbestos as indicated on the label.

Make sure that your neighborhood elementary school no longer has asbestos powder for making puppets and masks. Find out whether the building you work in has uncovered asbestos fireproofing in the recirculation air plenum or on ceilings. Ask local breweries and distillers if they use asbestos filters.

If there is an asbestos mine, mill or manufacturing plant near you, find out what it discharges into the air and water. Are ore-carrying trucks covered with tarpaulins?

Before 1895, when Johnson and Johnson began talc manufacture, babies were commonly dusted with corn starch; this safe substitute is still available, and at one-fourth the cost of talc. We recommend it. Don't use feminine hygiene sprays which contain talc. Avoid talc-dusted balloons, rice, prophylactics and chewing gum. If you suspect a product, write to the manufacturer—and let us know if you discover another use of asbestos.

While many of the applications of asbestos products cannot be judged at this moment due to lack of sufficient evidence of hazardous use, still we should err on the side of prudence; we should remove a suspected product until the manufacturer proves that the item is not harmful. It is not the duty of the public interest scientist to prove whether each and every item is harmful or safe. The public has the right to demand this scientific evidence from the manufacturers of the consumer products which will otherwise simply be means to further profits at the expense of the health and safety of the American people.

Economics should not be the major determinant as to whether to remove an asbestos-containing product. Building plans may have to be modified and construction and demolition costs increased, but these are small when compared to the risk of health involved. The application of insulation in sheet or other solid form, although less convenient than spray application, still provides adequate insulation and fireproofing. Furthermore, asbestos-free sprays have been developed.

It is time for the American people to view asbestos as neither friend nor foe. The far wiser position is to treat this potentially toxic material with utmost respect, and only use it where absolutely necessary. If we did so, the volume of asbestos mined and processed would undoubtedly decrease, but the life and health of many people would be prolonged and improved. It is time the citizen makes his views known on this environmental pollutant.

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# Exhibit 23

*The Journal of Obstetrics and Gynaecology  
of the British Commonwealth*  
March 1971. Vol. 78. pp. 266-272.

## TALC AND CARCINOMA OF THE OVARY AND CERVIX

BY

W. J. HENDERSON, *Electron Microscopist*  
*Tenovus Institute for Cancer Research*

C. A. F. JOSLIN, *Consultant Radiotherapist*  
*Velindre Memorial Centre for Cancer Research*

A. C. TURNBULL, *Professor of Obstetrics and Gynaecology*  
*Welsh National School of Medicine*

AND

K. GRIFFITHS, *Director*  
*Tenovus Institute for Cancer Research, Welsh National School of Medicine, Cardiff*

### Summary

An extraction-replication technique was used to examine tissue from patients with ovarian and cervical tumours. In both conditions talc particles were found deeply embedded within the tumour tissue. The close association of talc to the asbestos group of minerals is of interest.

THE development in this laboratory of an extraction-replication technique (Henderson, 1969) for the study of foreign particles within tissues has allowed the *in situ* identification of crocidolite asbestos within the tissue of various mesotheliomas (Henderson *et al.*, 1969) removed from patients who had been concerned with the manipulation of asbestos in industry. This technique has now been applied to the study of tissue from ovarian and cervical carcinoma.

### MATERIALS AND METHODS

#### *Tissue*

The tissue studied was obtained from patients with cancer of either the ovary or the cervix, and was first prepared as paraffin sections for normal routine histological examination but was unstained. Sections were then stained for histological assessment in the usual manner, and adjacent unstained tissue prepared for electron microscopy.

#### *Replication Technique*

The extraction-replication procedure has been described (Henderson, 1969). Sections of tissue were immersed in xylene and in ethanol, and the dehydrated tissue was then embedded by

impregnating the section on to the surface of a thin sheet of acetone-softened cellulose acetate, mounted on a glass slide, and left to harden. On removing the slide, the embedded tissue was left in the cellulose acetate. The tissue was then outlined with thin strips of Scotch tape to form a shallow well, and a 10 per cent (v/v) polyvinyl alcohol (PVA) solution applied. When the PVA had hardened it was stripped from the section providing a replica of the tissue surface. Foreign particles associated with the tissue are often removed with the PVA during this stripping process.

A complete sequential examination through the embedded tissue is possible by taking successive strippings. These surface replicas were then preshadowed with platinum, a carbon film deposited for strength, and the PVA removed by floating the replica in a hot water bath. Replicas were mounted on electron microscope grids for examination, using the AEI-6B microscope.

### RESULTS

No asbestos particles were found in any of the tissue studied. Particles of talc were identified in approximately 75 per cent (10 of 13) of the



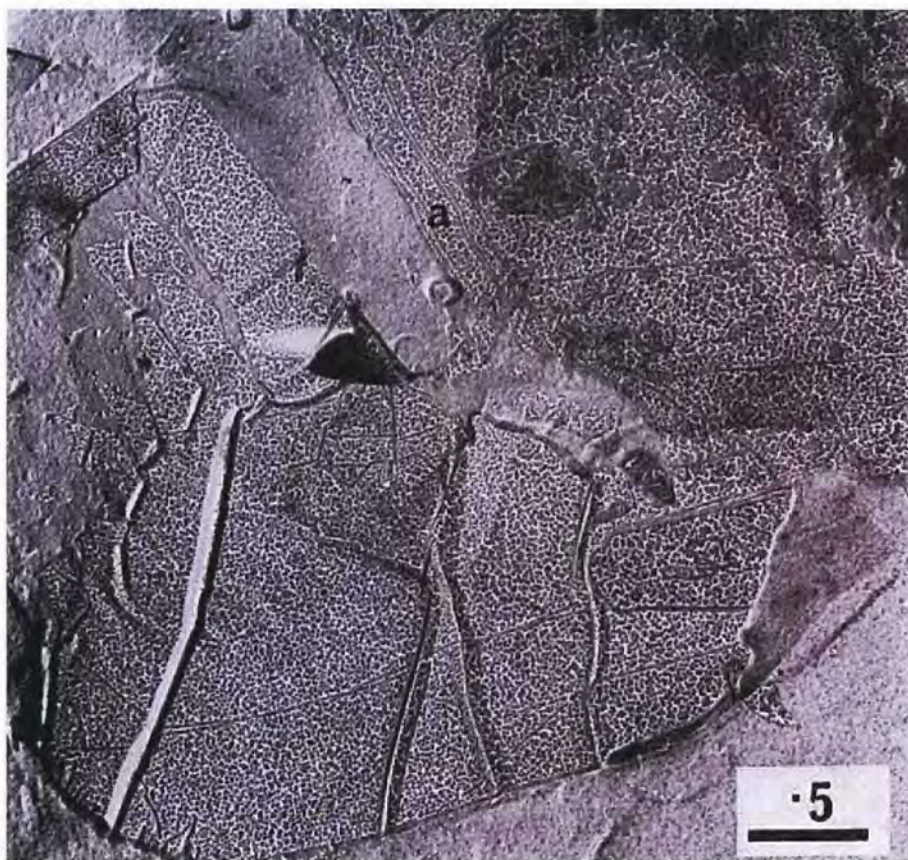


FIG. 1  
Typical decoration pattern on a particle of natural talc. Numerous crystal lattice planes are shown (a). ( $\times 30\,000$ .)  
Scale refers to  $1.0\,\mu$ .

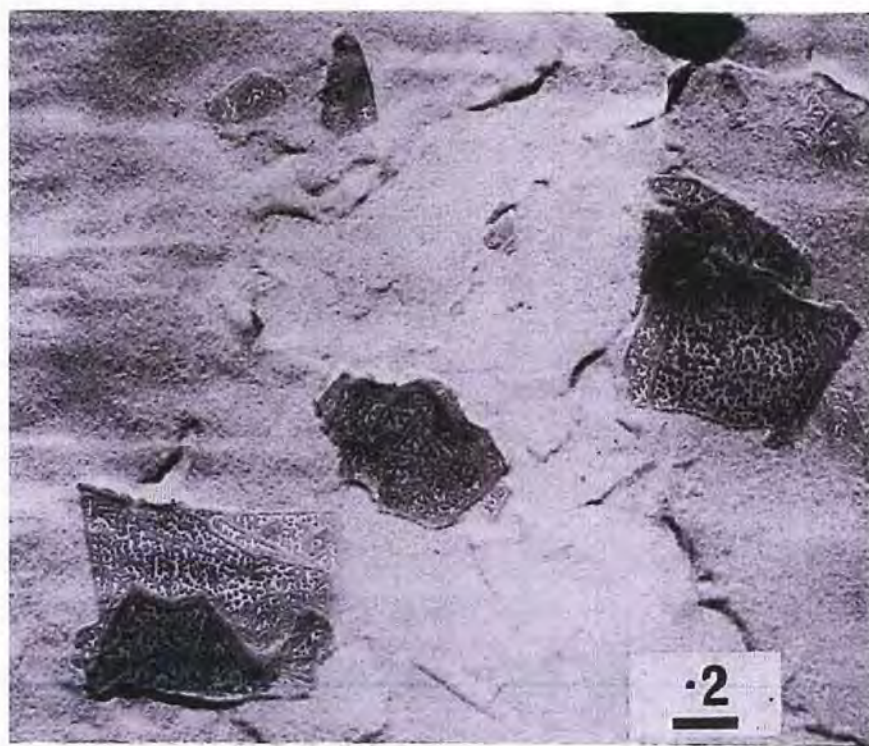


FIG. 2  
Commercial talc preparations illustrating the decoration pattern. ( $\times 40\,000$ .)





FIG. 3

Micrograph of tissue from a serous papillary cystadenocarcinoma of the ovary removed from a 27-year-old female. No previous abdominal operations had been carried out. The decoration pattern and lattice planes are shown. ( $\times 30\,000$ .)

ovarian tumours. Using the replication technique identification of talc is possible because of the characteristic "decoration pattern" induced by the evaporation of platinum *in vacuo* on the crystal surface. Figure 1 shows this pattern on a particle of *natural* talc and the distinctive lattice planes of the crystals. Anthophyllite asbestos, which is known to be converted naturally to talc, is the only crystalline material which is at present indistinguishable from talc by using the replication technique. The decoration pattern on material from a commercial talc preparation is also demonstrated in Figure 2.

Material found within the ovarian tumours

and identified as talc is illustrated in Figure 3. The talc particles were found deep within the tumour tissue. Some were as small as  $1000\text{\AA}$  in size but they were generally within a range from  $1000\text{\AA}$  to  $2\text{ }\mu$ .

Talc particles were also found embedded within tumours of the cervix. Figure 4 shows one such particle embedded in a capillary wall within the tumour, and Figure 5 illustrates the decoration pattern of the particle at a higher magnification. Crystals as large as  $5\text{ }\mu$  were found in tissue from the cervical tumours and were generally larger than those seen in the ovarian tumours. Talc crystals were found in



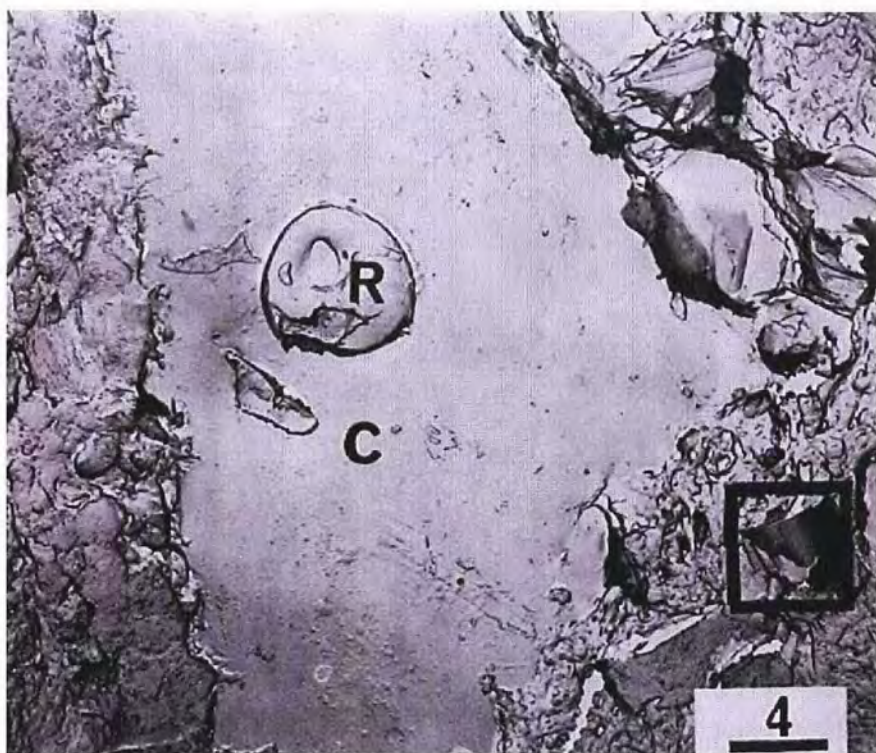


FIG. 4  
Micrograph of tissue from a squamous-cell carcinoma of the cervix from a 62-year-old female. C—capillary, R—red cell. The particle of talc can be seen in the wall of the capillary. ( $\times 3500$ .)



FIG. 5  
A higher magnification of the talc particles outlined in Fig. 4. The typical decoration pattern is shown. ( $\times 40\,000$ .)



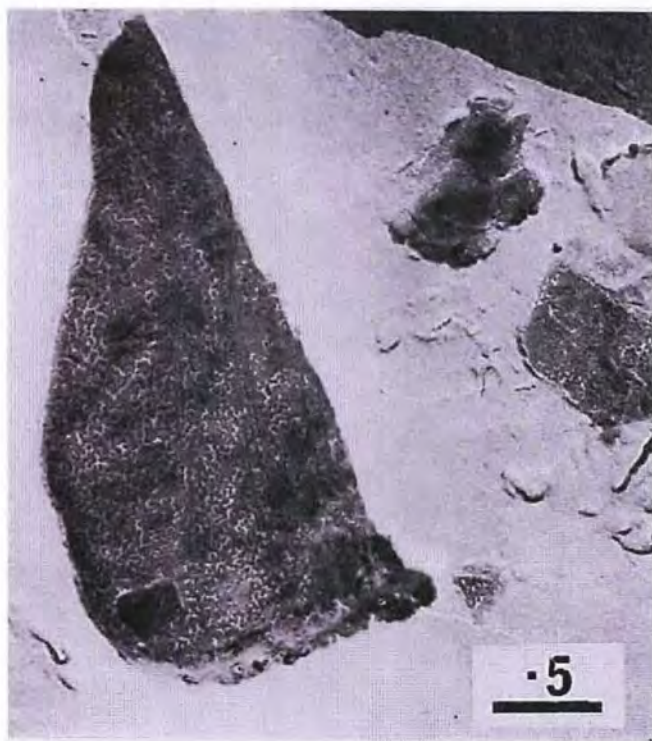


FIG. 6  
Talc particles found in  
tissue from a pneumo-  
coniotic lung. ( $\times 30\,000$ .)

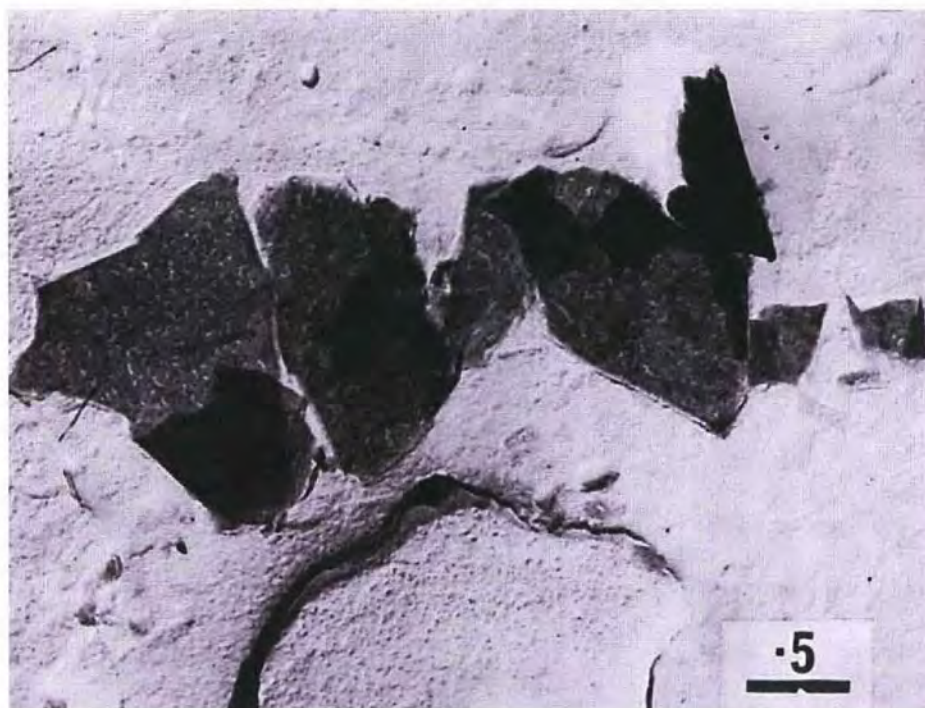


FIG. 7

Micrograph from the deepest part of an extensive papillary adenocarcinoma entirely replacing the endometrium in a 58-year-old woman, 8 years postmenopausal. Both ovaries were enlarged by hilar metastases, showing histological features similar to the primary endometrial lesion. Numerous talc particles were found in the primary endometrial carcinoma, but none in the metastatic ovarian tumours. ( $\times 26\,000$ .)



approximately 50 per cent of the cervical tumours examined (12 of 21) but it must be realized that these particles are extremely minute, often with the dimensions of viruses, and only small regions of the tumour tissue could be studied. Approximately ten replication "stripings" for electron-microscope examination are usually taken from each thin section of the tissue. Figure 6 illustrates the use of the technique in the examination of pneumoconiotic lung tissue from a patient whose industrial history indicated long exposure to Norwegian talc.

Many particles of talc were found concentrated in the deeper layers of a primary carcinoma of the endometrium (Fig. 7) whereas extensive studies of a secondary tumour in the ovary in the same patient did not show the presence of talc. Application of the technique to "normal" ovarian tissue removed from patients with breast cancer has also shown talc particles in 5 of 12 such tissues studied. Extensive study at high magnification with the electron microscope is, however, required for evaluation of a replica and particles could easily be missed.

The application of electron-microscope microanalysis (EMMA-AEI, Harlow, England) to the particles extracted by the replication technique has provided preliminary evidence that the crystals contain magnesium and silicon, talc being a magnesium silicate.

#### DISCUSSION

The possibility that the increasing incidence of carcinoma in western society may be related to a corresponding increase in the use of asbestos (Graham and Graham, 1967) is of interest, especially with regard to pleural and peritoneal mesotheliomas in workers exposed to crocidolite asbestos in industry (Wagner *et al.*, 1960; Elwood and Cochrane, 1964). There have been a number of reports about the relationship between asbestos and carcinogenesis (Smith *et al.*, 1965; Jacob and Anspach, 1965). However, the identification of asbestos fibres within tissue is extremely difficult. Fine particles embedded within tumour tissue are usually beyond the limits of resolution of the optical microscope, and tissue incineration, followed by electron microscopy of the isolated particles, may be unreliable if chemical changes are

induced by the procedure. Using normal light microscopy, identification of asbestos particles is based on the presence of characteristic ferritin bodies on some of the fibres, although these cannot easily be distinguished from similar bodies around elastin fibres (Henderson *et al.*, 1970). This procedure may not, however, be as unreliable as the use of polarized light for the demonstration of brightly illuminated "birefringent crystals of asbestos".

The replication technique (Henderson, 1969) failed to show asbestos fibres in the ovarian neoplasms studied. On the other hand, there was good evidence for the presence of talc, often indistinguishable from anthophyllite asbestos, within the ovarian tissue. (Anthophyllite is converted naturally to talc.) The talc particles were found localized deep within tumour tissues, and not universally dispersed throughout the tumour. The talc particles in the ovary were generally much smaller than those found in the tissue from the tumours of the cervix.

The relationship between asbestos and mesotheliomas appears well established, and the replication technique has provided unequivocal evidence for the presence of fibres within such tumours. This technique has also produced evidence for the presence of talc in tissue from pneumoconiotic lungs of a patient with an industrial history of exposure to Norwegian talc (Henderson *et al.*, 1970). The presence of mica, kaolin and asbestos fibres were also identified in tissue from these pneumoconiotic lung tissue.

Although it is impossible to incriminate talc as a primary cause of carcinomatous changes within either the cervix or the ovary on the preliminary observations described here, the possibility that talc may be related to other predisposing factors should not be disregarded and further investigations are obviously required.

#### ACKNOWLEDGEMENTS

The authors gratefully acknowledge the generous financial support of the Tenovus Organization. They also thank Dr. J. W. Dobbie, Department of Pathology, Royal Infirmary, Glasgow, for supplying a number of tissue sections, and also Mr. D. E. Evans, Department of Geology, National Museum of Wales, for the natural minerals required for reference purposes.

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# Exhibit 24



MOUNT SINAI SCHOOL OF MEDICINE  
of The City University of New York

FIFTH AVENUE AND 100TH STREET NEW YORK, N.Y. 10029



Department of Community Medicine

19 SEP 1971

August 22, 1971

Mr. W.J. Henderson  
Tenovus Institute for Cancer Research  
The Welsh National School of Medicine  
Heath  
Cardiff, Wales  
Great Britain

Dear Mr. Henderson:

My colleagues and I have read with great interest the recent report "Talc and Carcinoma of the Ovary" in the British Journal of OB-GYN. You and your associates are to be congratulated on a very good and important piece of work.

Dr. Hildick-Smith, medical director for Johnson and Johnson Company, forwarded to our laboratory a block of tissue from the Tenovus collection. We have studied the material and have confirmed your observations. We have also found other particles of interest. We feel these new observations are worthy of report to the scientific community here in the United States.

Would you or your colleagues object to our reporting these additional findings? We will certainly acknowledge your work, findings, and the origin of the tissue.

We shall be looking forward to hearing from you concerning this matter.

Sincerely,

Arthur M. Langer  
Associate Professor of Mineralogy

AML/lh



# Exhibit 25

2 June 1979

SA MEDICAL JOURNAL

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# Migration of a Particulate Radioactive Tracer from the Vagina to the Peritoneal Cavity and Ovaries

P. F. VENTER, M. ITURRALDE

## SUMMARY

In this report we describe a radionuclide procedure designed to evaluate the migration of a particulate radioactive tracer from the vagina to the peritoneal cavity and ovaries, as well as the determination of the patency of the pathways between these two extremes of the female reproductive system.

<sup>99m</sup>Tc-labelled human albumin microspheres (<sup>99m</sup>Tc-HAM) were deposited in the posterior fornices of 24 patients a day before they were to undergo different gynaecological operations. During this period sequential images were obtained and after the operation radioactivity levels in the removed organs and tissues were counted with a scintillation detector.

In 14 out of 21 cases, the ovaries and fallopian tubes were counted separately from the uterus. Nine were positive (radioactivity levels were sufficiently high in the tubes and ovaries) and 5 were negative (no substantial radioactivity levels could be detected in either the tubes or the ovaries). The 5 negative results all occurred in patients with proved tubal damage as a result of previous infection.

All the results were either true positive or true negative, providing evidence of migration, or obstruction, of <sup>99m</sup>Tc-HAM from the vagina through the uterus and tubes to the peritoneal cavity and ovaries.

*S. Afr. med. J.*, 55, 917 (1979).

In the female, the peritoneal cavity is linked with the outside via the fallopian tubes, the uterus and the vagina, and there is evidence of migration of different substances in either direction. For example, malignant cells from ovarian carcinoma can be demonstrated in the posterior fornix of the vagina.<sup>1</sup> After menstruation the gonococcus can penetrate the cervix and gain access through the uterus and tubes to the peritoneal cavity and ovaries.<sup>2</sup> For pregnancy to occur, spermatozoa have to move up the uterus and the ova down the tube. Retrograde menstruation is also a well-known phenomenon. After insufflation, air and gases pass easily from the vagina into the peritoneal cavity up to the diaphragm. Radio-opaque contrast media are introduced with great ease through the uterus and

tubes into the peritoneal cavity, and tubal patency is easily demonstrated during peritoneoscopy by injection of a dye through the cervix and into the tubes.<sup>3</sup>

Does this also hold for inert chemical substances? Will a chemical substance deposited in the vagina later appear in the peritoneal cavity? Such migration could well explain the aetiological role of chemical substances in certain gynaecological diseases. It has already been suggested that talcum powder is one of these potentially dangerous inert chemical products. Electron micrographic slides of removed human ovaries have shown asbestos particles resting on them, and there is evidence that these particles originated from talc used to dust condoms.<sup>4</sup>

To demonstrate the upward migration of chemical substances we made use of radionuclide imaging and counting techniques.

## MATERIAL AND METHODS

The subjects of this study were 24 adult women, both Blacks and Whites, from the Academic Hospitals of the University of the Orange Free State in Bloemfontein. All had been admitted to hospital for elective gynaecological surgical operations (Table I). The radionuclide procedure was explained and the necessary consent obtained.

TABLE I. SURGICAL INDICATION AND OPERATIVE PROCEDURE

Number of patients	Surgical indication	Operative procedure
4	Sterilization	Fimbriectomy
7	Ca. breast stage III	Bilateral salpingo-oophorectomy
1	Ca. breast stage III	Hysterectomy and bilateral salpingo-oophorectomy
2	Postmenopausal bleeding	Dilatation and curettage
2	Postmenopausal bleeding	Hysterectomy and bilateral salpingo-oophorectomy
3	Menorrhagia	Dilatation and curettage
4	Menorrhagia	Hysterectomy and bilateral salpingo-oophorectomy
1	Pelvic infection	Hysterectomy and bilateral salpingo-oophorectomy

## Procedure

The patient was placed in the supine position with the buttocks slightly elevated. The cervix and posterior fornix were exposed with a Cusco vaginal speculum and between 10 and 15 mCi of <sup>99m</sup>Tc-labelled human albumin microspheres (HAM) in a volume of less than 3 ml was

Department of Obstetrics and Gynaecology, University of the Orange Free State and Academic Hospitals, Bloemfontein  
P. F. VENTER, M.MED. (O. & G.), F.R.C.O.G., Professor

Department of Nuclear Medicine, University of the Orange Free State and Academic Hospitals, Bloemfontein  
M. ITURRALDE, M.D., D.M., Professor and Head

Date received: 22 November 1978.

Reprint requests to: Professor M. Iturralde, Dept of Nuclear Medicine, University of the Orange Free State, PO Box 339 (M. 27), Bloemfontein, RSA.

deposited in the posterior fornix. The patient was kept in this position for about 2 hours. The vulva was covered with a sanitary towel, and the legs were pressed together to prevent the radionuclide solution streaming from the vagina and thus lowering count levels.

In a few cases images were obtained, 4 and 24 hours after deposition of the radioactive tracer, with a Nuclear Chicago Pho/Gamma III scintillation camera (Figs 1 and 2). In most cases a count was performed on removed surgical specimens as a whole or separately on the uterus

and adnexae, for 1 000 seconds in a 12.7-cm well scintillation detector. In one case a piece of the anterior peritoneum, fluid from the pouch of Douglas and blood were also included in the count, to determine the possibility of reabsorption into the bloodstream from the vaginal mucosa.

Radiation exposure to the patients was low owing to the short half-life of  $^{99m}\text{Tc}$  (6 hours), and in most cases it was almost negligible since the target organs had been surgically removed.

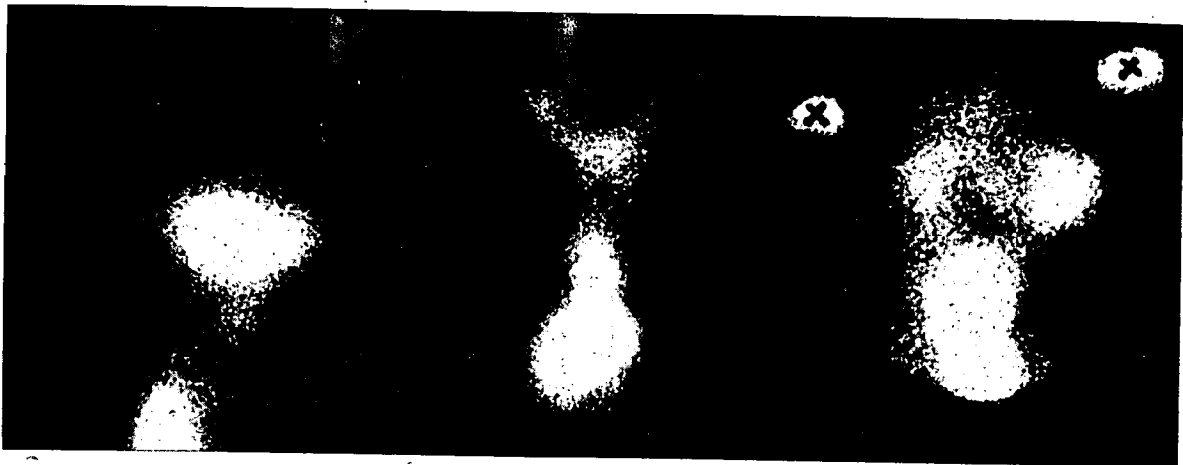


Fig. 1. Scintiphotographs showing positive  $^{99m}\text{Tc}$ -HAM migration: A — from the vagina to the uterus (4 hours after deposition); B — in both tubes (6 hours after deposition); C — reaching the peritoneal cavity and ovaries 24 hours after deposition (markers in the anterior superior iliac spines).

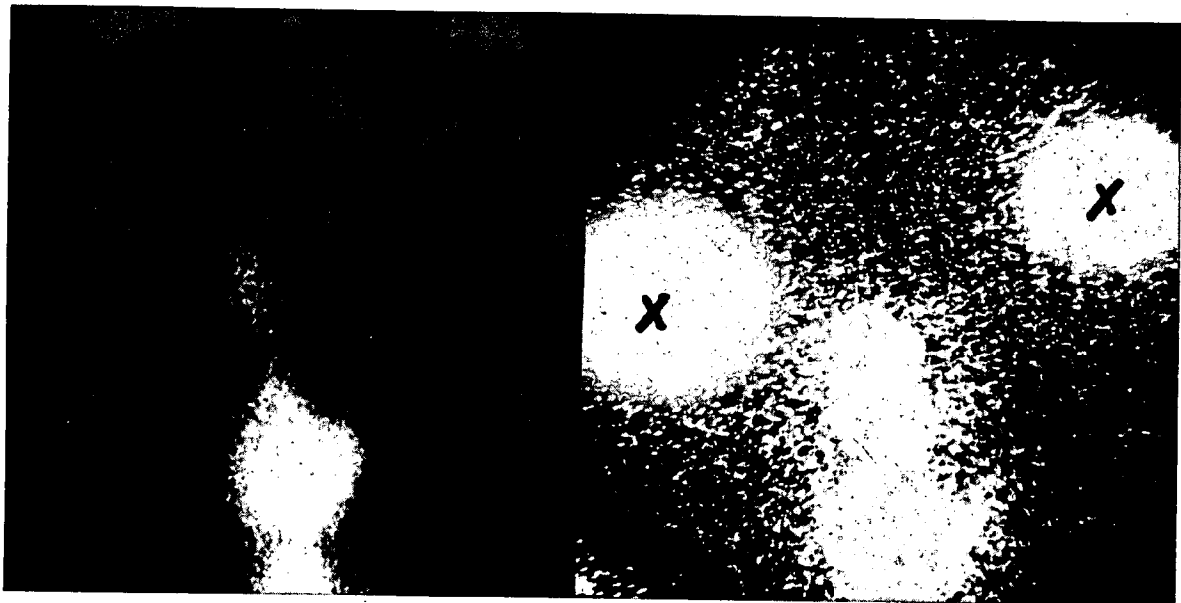


Fig. 2. Scintiphotographs showing negative  $^{99m}\text{Tc}$ -HAM migration: A — in the left tube (4 hours after deposition); the right tube is patent; B — in both tubes; 24 hours after deposition radioactivity remains in the uterus (markers in the anterior superior iliac spines).

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## RESULTS

A total of 24 patients were examined. Because radio-nuclide material streamed away from the vagina in 3 patients, these cases were considered technically defective and were not included in the final analysis.

Of the remaining 21 cases 16 were positive, that is sufficiently high radioactivity levels were obtained as evidence of migration of the radioactive tracer to the uterus or the tubes and ovaries. The results were negative in 5 cases; in 2 of them the radioactive microspheres did not pass from the vagina to the uterus and in the other 3 there was no migration to the adnexae or fimbria. In the latter, it was impossible to determine radioactivity levels in the uterus because the latter was not removed.

TABLE II. SUMMARY OF RESULTS

Patient	Tissue examined	Radioactivity present (+) or absent (-)
1	Organ imaging fimbria	Uterus, adnexa, fimbria +
2	Organ imaging	Uterus and adnexa +
3	Organ imaging fimbria	Uterus, adnexa, fimbria +
4	Organ imaging adnexa	Uterus +, adnexa +
5	Uterus and adnexa	Uterus +, adnexa -
6	Endometrium	Endometrium -
7	Organ imaging endometrium	Uterus and endometrium +
8	Organ imaging endometrium	Uterus and endometrium -
9	Endometrium	Endometrium +
10	Uterus and adnexa	Uterus and adnexa +
11	Adnexa	Adnexa +
12	Uterus and adnexa	Uterus and adnexa +
13	Uterus and adnexa	Uterus, adnexa +
14	Endometrium	Endometrium +
15	Uterus and adnexa	Uterus +, adnexa -
16	Adnexa	Adnexa +
17	Adnexa	Adnexa +
18	Fimbria	Fimbria -
19	Uterus and adnexa	Uterus and adnexa +
20	Adnexa	Adnexa -
21	Adnexa	Adnexa -

In 14 out of 21 cases it was possible to measure radio-activity levels in the adnexa separately from the uterus. Nine of these showed marked radioactivity in the tubes and ovaries, while in 5 the radioactivity levels were not much higher than the background. In all 5 of these patients, severe tubal occlusion due to previous infection was confirmed by study of the removed specimens (Table II).

In 1 case, radioactivity levels in blood were not much higher than in the background, which indicated that radio-active tracer had not reached the adnexa through the blood supply owing to local reabsorption in the vaginal mucosa.

## DISCUSSION

Evidence is available for migration of different substances in either direction within the female reproductive system between the peritoneal cavity and ovaries via the tubes, uterus and vagina, and the outside. Various living organisms actively follow this pathway in both directions. Gases, fluids, dyes and contrast media can easily be introduced from the vagina into the peritoneal cavity. If transit can take place so easily, it is probably the same for many chemical substances used for hygienic, cosmetic or medicinal purposes, many of which may have potential carcinogenic or irritating properties.

To prove this would be of great practical value, because migration of certain chemical substances could play an important aetiological role in gynaecological diseases and especially in carcinoma of the ovary.

We found the use of a particulate radioactive agent such as  $^{99m}\text{Tc}$ -HAM with a size range of 30 - 50  $\mu\text{m}$  to be a suitable and safe means of imaging and evaluating tubal patency and demonstrating the possibility of transit of particles from the vagina to the peritoneal cavity and ovaries.

Results obtained by this technique correlated with findings in the surgically removed specimens, thus demonstrating the accuracy of this radionuclide procedure.

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# Exhibit 26



## Ovarian Cancer and Talc

### A Case-Control Study

DANIEL W. CRAMER, MD,\*†‡ WILLIAM R. WELCH, MD,§ ROBERT E. SCULLY, MD,<sup>1</sup>  
AND CAROL A. WOJCIECHOWSKI, RN‡

Opportunities for genital exposure to talc were assessed in 215 white females with epithelial ovarian cancers and in 215 control women from the general population matched by age, race, and residence. Ninety-two (42.8%) cases regularly used talc either as a dusting powder on the perineum or on sanitary napkins compared with 61 (28.4%) controls. Adjusted for parity and menopausal status, this difference yielded a relative risk of 1.92 ( $P < 0.003$ ) for ovarian cancer associated with these practices. Women who had regularly engaged in both practices had an adjusted relative risk of 3.28 ( $P < 0.001$ ) compared to women with neither exposure. This provides some support for an association between talc and ovarian cancer hypothesized because of the similarity of ovarian cancer to mesotheliomas and the chemical relation of talc to asbestos, a known cause of mesotheliomas. The authors also investigated opportunities for potential talc exposure from rubber products such as condoms or diaphragms or from pelvic surgery. No significant differences were noted between cases and controls in these exposures, although the intensity of talc exposure from these sources was likely affected by variables not assessed in this study. *Cancer* 50:372-376, 1982.

THE POSSIBILITY that ovarian cancer may be caused by exposure to certain hydrous magnesium silicates such as talc and asbestos has been raised by several researchers.<sup>1-3</sup> The lack of epidemiologic studies regarding this hypothesis prompted us to investigate talc exposure in a case-control study of ovarian cancer.

#### Methods

The cases studied were women with ovarian cancer, diagnosed between November 1978 and September 1981 and identified through the pathology logs or tumor boards of twelve participating hospitals in the Greater Boston area. The study was restricted to English-speaking residents of Massachusetts ranging in age from 18 to 80 years. During the study period, 297 eligible cases were identified. Physicians denied permission to contact their patients in 13 instances. Fourteen patients declined to participate, and 14 other patients had died or moved before they could be contacted.

For each of the 256 interviewed cases, slides of the surgical specimens were reviewed by two authors (W.R.W. or R.E.S.). Eighteen cases were excluded as nonovarian primaries. Each ovarian tumor was classified according to the Histological Classification of Ovarian Tumors of the World Health Organization.<sup>4</sup> The present analysis was restricted to 215 white women with epithelial cancers, including 39 with tumors of borderline malignancy and their matched controls.

Control cases were identified through the Massachusetts Town Books, annual publications that list residents by name, age, and address. Controls were selected randomly from those women who matched cases by precinct of residence, race, and age within two years. Additionally, it was required that a subject be excluded

From the Departments of \*Obstetrics, †Gynecology, and §Pathology, Boston Hospital for Women, Division of the Brigham and Women's Hospital, the ‡Department of Epidemiology, Harvard School of Public Health and the <sup>1</sup>Department of Pathology, Massachusetts General Hospital, Harvard Medical School, Boston, Massachusetts.

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Address for reprints: Dr. Cramer, Department of Obstetrics and Gynecology, Brigham and Women's Hospital, Boston, MA 02115.

This study could not have occurred without the generous participation of many clinicians and institutions in the greater Boston area including: Dr. Emanuel Friedman of the Beth Israel Hospital, Drs. Robert Knapp and Thomas Griffiths of the Brigham and Women's Hospital and Sidney Farber Cancer Institute, Dr. Arthur Hassett of the Brockton Hospital, Dr. Joel Rankin of the Framingham Union Hospital, Dr. Edward Copenhaver of the Lahey Clinic Foundation, Dr. James Nelson of the Massachusetts General Hospital, Dr. Clement Yahia of the New England Deaconess Hospital, Dr. Lalita Gandhir of the Pondville Hospital, Dr. James Whelton of Saint Elizabeth's Hospital, Dr. Stephen Alpert of the Salem Hospital, Dr. Richard Hunter of the University of Massachusetts Medical School. The superb clerical and technical assistance of Ms. Eileen McManus, Ms. Sally Cassells, and Ms. Christine Peters is also gratefully acknowledged.

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as a control if she had had a bilateral salpingo-oophorectomy, but subjects were not excluded because of prior hysterectomy or other types of pelvic operations. Women who had had pelvic operations were generally confident in their knowledge of whether their ovaries had been removed, but the nature of the operations could not be verified by hospital records in each instance. Women whose statements could not be verified were included or excluded on the basis of their recollection of the surgery. The 215 controls in this study were eventually obtained from a total of 475 potential controls identified through the Town Books. Fifty-six (12%) of the total could not be reached because they had moved, died, or had disconnected or unlisted phones. Twenty-nine (6%) of the total were ineligible because of a history of bilateral salpingo-oophorectomy, while 20 (4%) were of the wrong age or race or did not speak English. Of the total potential controls, 155 (33%) refused to participate. If the 215 cases are characterized as to ease of matching, 121 (56%) cases were matched with no refusals, 58 (27%) were matched after one refusal, and 36 (17%) were matched only after two or more refusals.

Interviews were conducted personally to assess a number of factors from the menstrual and reproductive history, medical and family history, and environmental exposures. This report will deal only with the results of several questions related to potential or definite talc exposure by way of contraceptive practices, operations, or perineal hygiene. Subjects were stratified by potential confounders described below, and adjusted relative risks associated with these exposures were calculated by the Mantel-Haenszel procedure as adapted by Rothman and Boice.<sup>5</sup> To accommodate other confounders as well as the matched design in the data collection, logistic analysis for matched data as described by Breslow *et al.*<sup>6</sup> was also employed.

### Results

The average age (and standard error of the mean, SEM) for cases was 53.2 (1.0) years and for controls,

TABLE 1. Characteristics of Cases and Controls

Characteristic	Cases (Total = 215)		Controls (Total = 215)	
	No.	%	No.	%
Educational level (completed college)	48	22.3	49	22.8
Religion (Roman Catholic)	126	58.6	128	59.5
Marital status (never married)	46	21.4	24	11.2
Nulliparous	78	36.3	39	18.1
Menopausal status (postmenopausal*)	137	63.7	129	60.0

\* Postmenopausal at time of diagnosis for cases or for interview for controls.

53.5 (1.0) years. Table 1 shows other characteristics of subjects. Controls were comparable to cases in educational level and religion. Cases and controls differed significantly in marital status and parity with parity being the more important discriminator between them. Sixty-four percent of the cases were postmenopausal at the time of diagnosis, whereas 60% of controls were postmenopausal. Of these, 15 cases and 20 controls had had an artificial menopause. Parity and menopausal status were considered important potential confounders in this analysis and were adjusted for as described above.

Relative risks associated with potential talc exposure from contamination on rubber products are explored in Table 2. Although surgical gloves of recent vintage are dusted with starch, talc contamination may still be found.<sup>7</sup> Thus, a history of pelvic operations (appendectomy, cesarean section, hysterectomy, and other operations on internal genital organs other than bilateral salpingo-oophorectomy) was determined in cases and controls. Excluding operations associated with the diagnosis or treatment of the ovarian cancer among the cases, no excess in the occurrence of pelvic operations was noted. The greatest opportunity for talc exposure from surgery occurred before 1950, when talc was the

TABLE 2. Relative Risks (RR) for Common Epithelial Ovarian Cancers Associated with Potential Talc Exposure from Contamination on Rubber Products

Exposure	Cases		Controls		Crude RR	Adjusted RR*	95% Confidence limits
	Total	No. (%) with exposure	Total	No. (%) with exposure			
Pelvic surgery	215	78 (36.3)	215	75 (34.9)	1.06	1.17	(0.76-1.79)
Pelvic surgery (prior to 1950)	215	51 (23.7)	215	48 (22.3)	1.08	1.12	(0.69-1.82)
Use of condom†	169	19 (11.2)	191	30 (15.7)	0.68	0.77	(0.41-1.44)
Use of diaphragm†	169	37 (21.9)	191	35 (18.3)	1.24	1.19	(0.69-2.05)

\* Adjusted for parity (nulliparous, parous) and menopausal status (pre- and postmenopausal).

† Restricted to subjects who had ever been married.

TABLE 3. Relative Risks (RR) Associated with Using Talc for Storage Among Diaphragm Users\* by Duration of Use of Diaphragm

Duration of diaphragm use	Cases		Controls		Crude RR	Adjusted RR†	95% Confidence limits
	Total	No. (%) who used talc on diaphragm	Total	No. (%) who used talc on diaphragm			
Total diaphragm use less than five years	13	6 (46.2)	21	8 (38.1)	1.39	1.82	(0.42-8.00)
Total diaphragm use five or more years	27	16 (59.3)	19	11 (57.9)	1.06	1.23	(0.36-4.17)
All users	40	22 (55.0)	40	19 (47.5)	1.35	1.56	(0.62-3.88)

\* Includes all women who used diaphragm regardless of marital status.

† Adjusted for parity and menopausal status.

predominantly used dusting powder for surgical gloves. However, no significant excess of pelvic operations prior to 1950 was observed for cases.

The patients (cases) who, at sometime, had been married, chose condoms less frequently and diaphragms more frequently for contraception than the control group, but neither difference was statistically significant. Condom use is not necessarily associated with talc exposure. Not all brands of condoms are dusted with talc, and lubricants could affect the shedding of talc from the condom. Unfortunately, details on specific brands of condoms were not obtained. Similarly, talc exposure is not a necessary consequence of diaphragm use. We inquired specifically about the practice of dusting the diaphragm with talc for storage after use (Table 3). Among all subjects who had used a diaphragm, there was no significant excess of cases who regularly stored their diaphragm using talc, nor was any greater risk associated with this practice observed among women who had used the diaphragm for longer durations. Before the risk from this exposure can be adequately assessed, greater detail is needed including frequency of use and whether the powder was washed off prior to use. Furthermore, contraceptive jellies used with the diaphragm could affect the transport of talc in the genital tract.

Hygienic practices involving talc were also studied. Specifically, we inquired whether women had regularly used talc as a dusting powder on the perineum or regularly dusted sanitary napkins with talc (Table 4). Ninety-two (42.8%) of the cases had talc exposure by either or both of these routes compared with 61 (28.4%) of the controls. The adjusted relative risk was 1.92 ( $P < 0.003$ ) with 95% confidence limits of 1.27-2.89 compared to subjects who had neither exposure. Sixty (27.9%) cases and 48 (22.3%) controls had either used talc for dusting or on napkins but not both. This difference yielded an adjusted relative risk of 1.55, which was of borderline significance ( $P = 0.06$ ). The greatest risk occurred in women who had both exposures (use on the perineum and on napkins) compared to women who had neither exposure. Thirty-two (14.9%) of cases were in this category compared with 13 (6.0%) controls, for an adjusted relative risk of 3.28 ( $P < .001$ ) and 95% confidence limits of 1.68-6.42. The histologic characteristics of tumors developing in women with perineal exposure to talc did not differ significantly from those in women without perineal exposure to talc (Table 5). In addition, the proportion of cases with tumors of borderline malignancy was identical among those with and without perineal exposure to talc. Twenty-two (18%) of 123 cases without the exposure had tumors of bor-

TABLE 4. Relative Risks (RR) for Common Epithelial Ovarian Cancers Associated with Talc Exposure in Perineal Hygiene

	Types of perineal exposure				
	No perineal exposure	Any perineal exposure	As dusting powder but not on napkins	On napkins but not as dusting powder	Both on napkins and as dusting powder
Cases (Total = 215)	123 (57.2%)	92 (42.8%)	43 (20.0%)	17 (7.9%)	32 (14.9%)
Controls (Total = 215)	154 (71.6%)	61 (28.4%)	34 (15.8%)	14 (6.5%)	13 (6.0%)
Crude rr	1	1.89	1.58	1.52	3.08
Adjusted RR*	—	1.92	1.55		3.28
95% confidence limits	—	(1.27-2.89)	(0.98-2.47)		(1.68-6.42)

\* Adjusted for parity and menopausal status.

derline malignancy compared to 17 (18%) of 92 with the talc exposure.

### Discussion

The argument linking talc and ovarian cancer includes four elements: the chemical relationship between talc and asbestos, asbestos as a cause of pleural and peritoneal mesotheliomas, the possible relation between epithelial ovarian cancers and mesotheliomas, and the ability of talc to enter the pelvic cavity. The mineral talc is a specific hydrous magnesium silicate chemically related to several asbestos group minerals and occurring in nature with them. Generic "talc" is seldom pure and may be contaminated with asbestos, particularly in powders formulated prior to 1976.<sup>8,9</sup>

Epidemiologic studies have clearly linked lung cancer and pleural and peritoneal mesotheliomas with asbestos exposure.<sup>10</sup> An excess of similar pulmonary lesions has been reported in talc workers and seems to be correlated with the amount of asbestos contamination in the talc deposits worked.<sup>11</sup> Graham and Graham<sup>1</sup> were able to induce ovarian neoplasms in guinea pigs with asbestos and suggested that ovarian cancer could be related to asbestos exposure, noting the similarity between mesotheliomas and ovarian cancers. Parmley and Woodruff<sup>12</sup> further emphasized this similarity and popularized the pelvic contamination theory, which proposed that environmental carcinogens might enter the pelvic cavity via the genital tract. Years earlier it had been observed that inert carbon particles placed in the vagina immediately prior to hysterectomy could be recovered from the fallopian tubes.<sup>13</sup> Although greeted with skepticism, the finding of talc particles embedded in normal and abnormal ovaries suggests that talc is a substance that can enter the pelvic cavity via the vagina.<sup>2</sup>

Although no consensus concerning the risks of talc has emerged from letters, editorial and articles,<sup>3,14,16</sup> participants in the discussion have agreed upon the need for epidemiologic studies of ovarian cancer and talc exposure. In this case-control study of ovarian cancer of the epithelial variety, we investigated several sources of potential talc exposure. Among these, the only significant finding was an association between ovarian cancer and hygienic practices involving the use of talc on the perineum. It is especially notable that women who regularly had both dusted their perineum with talc and had used it on sanitary napkins had more than a three-fold increase in risk compared to women with neither exposure. Several potential biases must be considered in interpreting this association.

The observation by Wynder *et al.*<sup>17</sup> that menstrual characteristics may differ between women with ovarian cancer and controls might suggest that such differences may confound the association between perineal use of

TABLE 5. Characteristics of Ovarian Cancer in Women with and without Perineal Exposure to Talc

	No perineal use of talc	Any perineal use of talc
	No. (%)	No. (%)
Serous	66 (53.7)	45 (48.9)
Mucinous	16 (13.0)	14 (15.2)
Endometrioid and clear cell	32 (26.0)	24 (26.1)
Other and undifferentiated	9 (7.3)	9 (9.8)
Total	123 (100)	92 (100)

talc and ovarian cancer. We found that menstrual characteristics of cases and controls were virtually identical in this study. Fifty-three (24.7%) cases complained of moderate or severe dysmenorrhea compared to 56 (26.0%) controls. Twenty-five (11.6%) cases complained of irregular periods compared to 32 (14.9%) controls. The average numbers (and SEM) of days of flow and cycle length were, respectively, 4.9 (0.1) and 28.9 (0.3) days for cases and 4.9 (0.1) and 29.6 (0.3) days for controls.

Since entry of talc into the pelvic cavity is prevented by hysterectomy or tubal ligation, it might also be argued that the inclusion of subjects with pelvic surgery in the analysis may obviate any association between talc and ovarian cancer. It should be noted that such surgery generally occurred near the end of reproductive life for both cases and controls, probably after most significant talc exposure had already occurred. The exclusion of such subjects from the analysis did not substantially alter the observed associations. For example, the adjusted relative risk for the use of talc both on the perineum and sanitary napkins was 2.79 ( $P < 0.003$ ) in the group without pelvic surgery compared to 3.28 observed for the entire group.

In terms of other confounders, the association persisted after adjustment for menopausal status and parity. We also applied multivariate logistic regression for paired observations.<sup>6</sup> The maximum likelihood estimate of relative risk associated with any perineal use of talc was 1.61 ( $P = 0.03$ ) with 95% confidence limits of 1.04–2.49 after simultaneous adjustment for religion, marital status, educational level, ponderal index, age at menarche, exact parity, oral contraceptive or menopausal hormone use, and smoking.

Our sample of cases represents more than 50% of ovarian cancer cases diagnosed in Boston residents in the study period. Therefore, it is difficult to conceive of a plausible bias in the selection of cases that would yield this excess use of talc. There is reason for concern that the high refusal rate among the controls may have introduced a selection bias among the controls. But,

when we restricted the analysis to the 121 cases who were matched without a control refusal, we again found a significant association between talc use and ovarian cancer. For women who had used talc both in dusting and on the perineum we found an adjusted relative risk of 2.44 ( $P < 0.05$ ). Interviewer bias is also unlikely to explain the association. Of the 18 women who were initially interviewed as ovarian cancer cases but later excluded as having metastatic tumors to the ovary, only one (5.6%) had both perineal and napkin exposure as compared with 15% in cases and 6% in controls.

Experimental data which might bear on the carcinogenicity of talc come primarily from models using pleural implantation of various minerals in rats.<sup>18</sup> These data suggest that carcinogenicity is dependent primarily upon the shape of the particles with long thin fibers such as those occurring in crocidolite asbestos being most carcinogenic. Talc consists primarily of plates but may contain fibers, although voluntary guidelines to limit the content of asbestiform fibers in consumer talcums were proposed by the cosmetics industry in 1976.<sup>19</sup>

If talc is involved in the etiology of ovarian cancer, it is not clear whether this derives from the asbestos content of talc or from the uniqueness of the ovary which might make it susceptible to carcinogenesis from both talc and other particulates. With ovulation entrapment of the surface epithelium of the ovary into the ovarian stroma occurs. If present, talc or other particulates might be incorporated into these inclusion cysts. Apparently implantation of foreign bodies into the lumens of epithelial lined organs provides a favorable environment for carcinogenesis.<sup>20</sup> Alternatively, talc might serve to stimulate entrapment of the surface epithelium and act in the same way that "incessant ovulation" has been proposed as an etiologic factor for ovarian cancer.<sup>21</sup> Given the histologic and clinical diversity of ovarian cancer, talc exposure is unlikely to be the only cause. Undoubtedly, reproductive experiences such as pregnancies and, perhaps, oral contraceptive use play a role in its etiology.<sup>21-23</sup> The possibility that talc exposure interacts with these variables deserves further investigation.

It is hoped that this report will stimulate further study of talc exposure in relation to ovarian cancer. Animal studies would be helpful to determine whether and under what circumstances ovarian tumors may be induced by various talc preparations. Epidemiologic studies should focus on opportunities for excessive vaginal contamination with talc such as when it is repeatedly used in perineal dusting powders or sprays and in or on tampons, sanitary napkins, or other products intended for

intravaginal use. More precise details on the exact nature and frequency of the exposure and the amount and specific brand of powder used are essential. Opportunities for talc exposure are widespread and pervasive,<sup>24</sup> but that should not discourage epidemiologists from studying this potentially important exposure in relation to ovarian cancer.

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# Exhibit 27

*Pass*

*James 1986 P. 5/9*

TECHNOLOGICAL FORECAST

- POWDERS -

Powders refers to various inorganic and organic compounds that are applied to baby and adult skin, that are generally considered inert, and that provide skin benefits mainly from their physical characteristics, rather than their chemical compositions. This forecast does not cover medicated powders, where the powder is a vehicle for an active ingredient such as an anti-diaper rash agent.

A. PRODUCT BACKGROUND

1. Attribute Factors

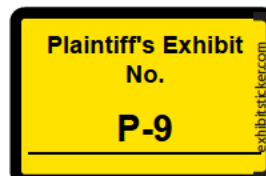
User end benefit attributes and product attributes have been defined for both baby and adult needs.

User:	Baby	—	Adult
Attribute:			

- |                     |   |
|---------------------|---|
| <u>End Benefits</u> | - <u>Dry slip:</u> softness, smoothness, lubricity  |
|                     | - <u>Wet slip:</u> ability to convey the same tactile feel of softness, smoothness, slipperiness as found with powder on dry skin |
|                     | After bath,                      After bath, shower   |
|                     | during diaper                      change   |
|                     | - <u>Absorbency:</u> take up water/wetness  |
|                     | - <u>Adhesion</u>   |
|                     | (Not considered                      Vertical surface retention,  |
|                     | important)                      esp. when applying  |
|                     | after showering.  |
|                     | - <u>Reduce Friction:</u> prevent chafing & rubbing   |
| <u>Product</u>      | - <u>Flow:</u> ease of dispensing   |
|                     | - <u>Spreadability:</u> ease of application to the skin   |

Safety Factors

Safety of cosmetic powders has been a concern, especially among health professionals. They have decided that powders provide no health benefit. Therefore, the potential for harm from respirables or accidental over exposure should be avoided. Mothers are now being advised not to use baby powder, especially talc baby powders.



- 2 -

There is also a growing concern/public awareness about airborne pollutants, including dust and other respirable particles. As this issue gains more attention, products (such as shaker top dispensed cosmetic powders) which potentially contribute to airborne dust could become expendable risks.

Retrospective studies have implicated talc use in the vaginal area with the incidence of ovarian cancer. While a CTFA sponsored animal study has shown that talc does not migrate, this concern does affect use of powders by adult women.

Based on the scientific evidence and the extensive experience in use, we believe that cosmetic powders are safe for use for babies and adults.

Normal use of cosmetic powders has not been related to safety concerns for humans.

The relative importance of these attributes has not been established quantitatively. Thus a single performance index combining all these attributes is not available. The following hypothesis about the preference hierarchy has been used:

Baby use	=	Dry slip + wet slip	absorbency	flow	spreadability
Adult use	=	Dry slip + wet slip	absorbency	flow	
		adhesion	spreadability	last	

There are few quantitative, objective laboratory test methods established for measuring these attributes. Product acceptability has normally been measured through expert and consumer subjective opinions against known standards. These are:

- 3 -

<u>Attribute</u>	<u>Test Method</u>
- Dry slip (smoothness, softness, etc.)	Subjective feel against Windsor 66 standard (usually Johnson's Baby Powder)
- Wet slip	Same as above
- Absorbency	Timed water uptake: GATS cc of H <sub>2</sub> O/gm of powder/unit of time
- Adhesion	Subjective opinion
- Flow	a. Rotating shaker: gm of powder dispensed/unit of time b. Angle of repose: angle in degrees of mound of powder dis- pensed from funnel
- Spreadability	Subjective feel and observation of coverage against standard
- Respirable Safety	Dusting test using impact meter: mg of powder under 10 microns/meter <sup>3</sup> of air per gm of powder

## 2. Technical Considerations

The physical mechanisms of actions, rather than the biological, provide the basis for attributes. In general, powders are particles of granular, spherical or platelet shape and can be found naturally or synthesized.

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POWDERS

<u>Material</u>	<u>Shape</u>	<u>Water Affinity</u>
<u>Natural</u>		
Talc	Plates - Granular	Hydrophobic (water & oil wettable)
Clays	Granular	Hydrophilic
Chalks	Granular	Hydrophobic (wetable)
Graphite	Plates	Hydrophobic
<u>Organic</u>		
Starches	Spherical	Hydrophilic
- Corn	▪	▪
- Potato	▪	▪
- Rice	▪	▪
- Tapioca	▪	▪
- Modified	Plates - spheres	Hydrophilic to hydrophobic
Cellulosics	Fibers	Hydrophilic
<u>Synthetic</u>		
Nylon	Plates - Granular	Hydrophobic to hydrophilic
Polyesters	Plates - Granular	

All particle shapes can provide surfaces which give the dry slip feel. Wet slip occurs when hydrophobic materials exhibit surface wetability, which still allows particles to slide over each other.

Because of the smooth surfaces, adhesion is dependent only on van der WAALS forces at the molecular level between the powder particle and the skin substrate spreading powders on the skin greatly improves adhesion. Because there are relatively weak forces, adhesion when powder is sprinkled on dry skin is low.

Flow and spreadability are affected by the particle shape. Spherical particles have the least surface and contact areas, and so have the lower interparticle attraction. Platelets expose more surface area and offer significantly more contact areas...thus greater interparticle attractions. Thus, flow is generally greater with spherical powders. On the other hand, the ability of platelets to slide over one another helps overcome interparticle attraction. So, when the spreading forces are in the same plane as the platelet direction, spreadability differences between spherical and platelet particles are not as noticeable as flow differences.



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Potential Respirable Hazard is related to chemical composition and particle size.

Any shape particles can be respirable. The key issues are:

- Do the particles remain or are they exhaled? *or trapped or expectorated or swallowed*
- If they remain, are there other exit mechanisms from the body? (Such as transport through a circulatory system and excretion.)
- If not, does the physical presence a chemical composition induce a physiologic reaction that is negative?
- Do the particles translocate to another site where a different and negative physiologic reaction can take place?

The current body of scientific literature support that cosmetic powders are different from asbestos and silica which have known toxicity.

Absorbency is related to the chemical associates frequently found with the pure talc powders and to surface wetability properties. When talc has small levels of alkaline carbonates, it will also show some absorbtivity. The starches wet and can absorb water. Wetability of all powders can be increased through the use of surfactants.

### 3. Attribute Limits

Only some of the functional and product attributes use objectively measured values (absorbency, flow, and toxicity [level of respirable dust]). Determining the limits of the other attributes must, at this time, be done qualitatively. The results of numerous consumer tests are summarized:

#### Dry Slip (Smoothness, softness, lubricity)

None	Consumer Expectation Range			Beyond
	.....			
Corn starch	JBCS Diaperene	JBP	"Super" talc	

#### Wet Slip

None	Consumer Noticeability			
	.....			
Cornstarch	Talc			

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Absorbency

0	0.35	0.85	1.2	1.7	3.0	
V66	Other	JBCS	JBCS	ZEASORB	Shower	cm <sup>3</sup> /gm/5 min
Talc	Talc		With		to	(free swell)
JBP	Products		ARD		Shower	
	Diaperene				P <sub>0</sub>	Cellulose
						Super Absorbents

Adhesion (Dry Skin)

					Good
Most Powders Similar					

Flow

None	0.16	0.4	0.95	1.38	
	Shower	Talc	Diaperene	JBCS	Rotating
	To Shower	JBP			shaker
					gm/time

Spreadability (Dry Skin)

Poor					Good
	Other	Shower	JBP		
	Talc	to	JBCS		
	Products	Shower			

Potential Inhalation Hazard

0	2	10	Very dusty	mg/m <sup>3</sup>	Threshold Limit Value
	Talc				
	JBP				
		Limit for			
		all nuisance			
		dust in			
		workplace			

*\* Respirable dust 10 micron and below ESD (equivalent spherical diam)*

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There are trade-offs among all these attributes. For example, as absorbency or adhesion are increased, these wet slip and flow properties are increased. The four key attributes are:

Absorbency  
+

Dry Slip + \_\_\_\_\_ 0 \_\_\_\_\_ +Adhesion

+  
Wet slip

Currently the two major powders - cornstarch and talc - map rather differently.

Cornstarch

Talc

Current consumer knowledge suggest these different products are perceived quite differently but both are accepted cosmetic powders.

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B. MARKET DYNAMICS

Being written

C. TECHNOLOGICAL CHANGE FORECAST

1. Remaining technical potential of current technologies estimates.

	P	Dry Slip	P	Wet Slip
		Super talc		J&J talc
Consumer Expectations				Cornstarch
		J&J talc, Cornstarch		
			E	E

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	P	Absorbency	P	Adhesion
Before		Talc w/surfactants		Liquid vehicle, talc
Froth				
Flotation		Cornstarch as is		Dry talc, cornstarch
			E	E
		after froth flotation		

## 2. Technical Potential of Emerging J&J Technologies

New technologies which have been and are being considered include:

### Processing Technology

The ability to further segregate the current cosmetic talc stream into narrow particle size ranges could provide optimized performance factors. A patent issued to J&J protects certain processes for segregation into what we've termed "super talc." Whether the material provides desired consumer benefits is undetermined.

Cornstarch process alterations, especially moisture level control and drying time/temperature, have been tried as means of altering feel and absorbency. Changes in absorbency are achievable but feel is only marginally affected.

Cornstarch which has been acted upon by enzymes is transformed into very soft, highly absorbent dusting powder. The process is not commercial however, and is not economically feasible.

### Additives Technologies

#### Powder Additives

It is possible to alter the characteristics of cosmetic powder products with powder additives. Flow improving agents, such as tricalcium phosphate in cornstarch, are an example. Considerable effort has been directed to find other cornstarches which improve the current product. "ARD" (highly absorbent, pre-gelled cornstarch) is an example. J&J has a patent for addition of this type of cornstarch to both talc and cornstarch powders.



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Other potential additives include cellulose, modified (chemically treated) starches, synthetic powders and super absorbent materials. While some have been shown to improve cornstarch characteristics, labeling and safety concerns have limited our pursuit of the technologies.

Non-Powder Additives

Liquids or semi solids such as petrolatum, mineral oils, and carbowaxes have been applied to talc. Benefits of the addition include improved fragrance retention, reduced respirable particles, reduced dustiness and improved spreadability and adhesion. The addition at meaningful levels causes reduced powder softness and lubricity. U.S. and foreign patents have been issued to J&J covering some of these findings.

3. Technical Potential of Other Unmarketed Technologies

- Biocellulose

D. KEY STRATEGIC ISSUES

1. Consumer Attributes

- Are the attribute mix and level of preference the same for a baby powder vs. an adult powder?
  - Absorbency needs different?
  - Adhesion needs more appreciated with adults?
  - Is the unique wet slip of talc an advertisable benefit for adults?
  - Can quantitative test methods be developed for all high attributes?

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2. Technical Issues

- Can synthetic polymers be made to mimic natural powders? Can particle size and shape be better controlled with a synthetic process? Is this a route to insuring no respirable problem particle sizes? Can synthetics be made wettable?

POWDERS NEXT STEPS

- ✓ 1. Check attribute values for J&J cornstarch and talc and adjust on diagrams, if needed. Determine if any laboratory notebooks can provide numerical values (Worksheet 1).
2. Bring together any data on competitive cornstarches and talcs (Worksheet 1). If any attribute values are significantly different, decide why, based on composition of competitive product. For example, if Vaseline talc is more absorbent than J&J, is the chemical composition of Vaseline talc known? Does it have more natural carbonate associates in it?
3. Institute a literature search and bring together any in-house data or knowledge about the attribute values of other powders, e.g. clays, chalks, cellulose polymers (Worksheet 1).
4. Refine composition, consumer needs, and mechanisms frameworks.
5. List barriers that explain differences between theoretical limits and practical levels (Worksheets 2-4).
6. Analyze market dynamics in terms of changing market positions between types of powders and brands of powders, and implications to product characteristic preferences. For example, if cornstarch has been growing at the expense of talc, what benefit might users be seeking?
7. Review patents of past 5 years in powders. Segment by company, by product, by year. Answer these issues:
  - What are all the alternative technologies?
  - Are companies working across several technologies?
  - Is their work continuous?
  - Do the same names repeat on related patents?
  - Do product or process patents dominate?
  - What benefits are being sought? Are new practical levels of performance being reached? To reach a new level, how much effort was put in?

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8. Identify any other unmarketed technologies, not found in patent estate or J&J BPC active R&D, through other sources.
9. Develop point-of-view on which areas have limiting mechanisms that are too difficult to change or overcome.
10. Develop point-of-view on remaining technical potential of other technologies to reach new levels of performance for various attributes.
11. List all areas in which knowledge is incomplete. Identify actions that could be taken if knowledge was perfect. Rank actions according to likely economic benefits. Develop list of strategic issues that should be pursued.
12. Draw conclusions. Make recommendations as to R&D actions.

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#### CONCLUSIONS

1. J&J is probably working at the consumer desirable limits of cosmetic powders technology:
  - nearly one hundred years of talc based powder experience has kept us the market leader.
  - vertical integration, through ownership of the Windsor mine in the U.S. and major purchase agreements with 11 other world sources, has enabled us to define cosmetic grade talc.
  - Johnson's Baby Powder is the standard for consumer comparison in the U.S., it is preferred over all other cosmetic powders.
  - cornstarch used in cosmetic powders is a commodity food stuff in the U.S. Natural structural limitations and the desire to avoid chemical modification, preclude direct improvements in the current technology.
2. J&J has limited its exploration of new technologies with several constraints:
  - labeled ingredients must be familiar to consumers and must be perceived as safe for baby.
  - safety concerns have restrained investigation of synthetic powder substitutes.
  - questions and challenges to current product safety have led to defensive protectivism of current technology.
3. J&J must pursue technologies which will provide a proven health benefit for use of powders on babies.
  - Johnson's Baby Powder sales are declining along with the overall cosmetic powders market in a classic mature product curve.
  - health professionals recommend against powder use on infants because potential risk exist and there are no health benefits.
  - while sales of powders for use on baby continue, it is inevitable that a "last straw" safety concern will lead to abandonment of powder use, unless health benefits outweigh the risks.

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4. The choice of which new technologies to pursue cannot be forecasted now because:

- consumer needs are not clearly defined.
- technologies which could provide the desired consumer benefits may not have been defined.

5. It is possible to hypothesize that:

- pursuit of technologies which would create talc based powders of higher interest (than JBP) to adults could be profitable.
- major effort should be expended to prove a health benefit for "cosmetic" dusting powders. Effort should probably be directed at cornstarch technologies since the limits of market penetration and potential benefit have not been approached.
- technologies which control or prevent potential safety hazards must be pursued to stifle the negative recommendations of health professionals. Accomplishments in this area will most likely not, by themselves, alter the declining powders use trend.

# Exhibit 28



Copy to  
Alan/Lisa  
(By Noon)

**- JOHNSON'S BABY POWDER -**

8/5/92

**Major Opportunities**

1. Continue to fully leverage the diaper rash claim against JBP cornstarch.  
- Current household usage on Johnson's Baby Powder Pure Cornstarch has declined from 13% in 1989 to 8% in 1991. Continue to support diaper rash claim in order to rebuild product usage.
2. Investigate ethnic (African American, Hispanic) opportunities to grow the franchise.  
- Johnson's Baby Powder has a high usage rate among African Americans (52.0%) and among Hispanics (37.6%). Additionally usage indices are high for African American and Hispanic females for JBP talc (139 and 101 respectively). Hispanic females also have a high index (151) against JBP cornstarch. The brand can increase volume in 1993 by targeting these groups.  
*The brand will institute an adult hispanic media program and potentially launch an adult Black print effort.*

**Major Obstacles**

1. The franchise faces weakness on several key skus in factory sales and in consumption.

	<u>YTD % +/- YAG</u>	
	<u>JBP</u>	<u>JBP/CS</u>
9 OZ	-35.6%	-26.4%
14 OZ	-9.7%	+6.3%
24 OZ	-14.8%	-31.2%

- JBP 4 OZ is down -6% in all outlets; Drug distribution down 5 points versus YAG.
- JBP 9 OZ is down -13% due to Food and Drug outlets; Drug distribution down 3 points versus YAG.
- JBP 14 OZ is down -11% due to declines in Food and Drug outlets.
- JBP 24 OZ is up +1%; a -10% decline in Drug has been offset by a +9% gain in Mass; Drug distribution is down 7 points versus YAG.
- JBPCS 9 OZ is down -8% due to declines in Food and Drug



- JBPCS 24 OZ is down -7% due to declines in Drug and Mass; Mass distribution is down 9 points.
- To correct this trend, renewed focus is needed on 9 oz and 24 oz sizes of the franchise. (Focus on building distribution in Drug and making these skus part of 1993 Ring Club.)
- 2. Negative publicity from the health community on talc (inhalation, dust, negative doctor endorsement, cancer linkage) continues.
  - Investigate the addition of an additive to reduce dust.
  - Encourage the reduction of dust in use by developing advertorial copy and media strategy to promote proper way to powder and diaper a baby.
- 3. Little differentiation on JBP talc and cornstarch versus private label.
  - Implement temporary price roll-backs on JBP and JBPCS (using ASP funds) to achieve merchandisable price points and attack private label in the absence of value added news ~~long term~~ (R15, P18)
  - Investigate JBP medicated line extension as news for second half 1993/1994.
  - Evaluate "time release" formula and /or oatmeal as second half 1993 news.
- 4. Mennen competitive coupon pressures strong YTD.
  - Participate in broad based infant coupon programs to combat pressure from Mennen (Period 2 FSI).
- 5. Talc is adult focussed business in baby focussed line.
  - Longer term, investigate moving brand to a different franchise.
  - Short term, supplement infant plan with periodic adult promotional support
    - Period 5 "Adult" FSI

# Exhibit 29

**JNJ000000081-JNJ000000083**



January 24, 1995

SUBJECT: Proposal for New Talc Study

TO: J. Neal Matheson

This recommends that J & J sponsor a new, highly structured epidemiology study focused to examine the possibility that cosmetic talc use can lead to increased risk of ovarian cancer.

#### Background

Six epidemiology studies of ovarian cancer have included talc use questions and attempted to make correlations between talc exposure and incidence of ovarian cancer. In each case, this hypothesis had a very low odds ratio ( $< 2.0$ ). However, the possibility that there is a stronger association led to a study specifically focused on talc use on the perineum and ovarian cancer.

Harlow, et al (1992) reported an overall odds ratio of 1.5, but also identified a high application rate subset of subjects which had a 2.8 OR. Harlow described this group as having a threefold risk of getting ovarian cancer.

At the FDA/IS RTP workshop last January, Harlow presented his work in a peer reviewed forum. The methodology and validity of his conclusions were most rigorously challenged by Dr. Ernst Wynder, a highly respected epidemiologist and a founder/President of the American Health Foundation.

Following the workshop, Dr. Wynder approached me to ask if J & J would be willing to sponsor better research on the subject. I responded that we might if the research brought new information to the field. Conducting one more routine epidemiology study was of no interest to us.

Wynder responded in October that he was ready to meet to discuss a potential study design. John Hopkins and I met with the group and upon detailed review of the protocol are impressed by the proposed study. Since then, I've had feedback from Marjorie, Bill Ashton, and Steve Phillips. We believe it is a well-controlled, potentially significant study which should replace all others as the definitive treatise on this issue (complete proposal attached).

#### What we will learn

The study will more comprehensively study the possibility by:

1. Carefully evaluating the epidemiology of controls (characteristics of women who use talc powders and why).
2. Obtaining detailed information on the duration and frequency of perineum exposure and the type of powder used.

3. Considering the latency period between exposure to talc and the diagnosis of ovarian cancer.
4. Considering the woman's history of tubal ligation.
5. Adjusting statistically for the major known risk factors for ovarian carcinoma.
6. Considering the difference in use of talc products pre- and post-1976. This should clarify the possibility that "asbestos contaminated" talc reported to have been on the market prior to 1976 was a causative factor.
7. Minimizing response bias by reducing "risk bias" and recruiting more appropriate controls.
8. Assessing potential occupational exposure to talc.

All these improvements over previous studies will clearly provide more specific, projectable results.

#### Possible Outcomes

J & J, as a sponsor of this study, will have the opportunity to participate in some aspects of the study design. We will not control the conduct of the interviews, the results analysis, or potential publication of the results. (Detailed aspects of our involvement and sharing of findings will be worked out after agreement to proceed.)

Obviously, the study could prove the expected - no correlation - or, the unexpected - one or more correlated aspects. We should expect any result to be published.

#### Cost and Timing

The study is expected to require 2+ years to complete and report 171 cases and 171 controls. The proposal shows a start date of March 1, 1995 and completion late 1997.

Costs proposed (we have not negotiated yet) by AHF are as follows:

3/1/95 to 2/28/96	\$176,911
3/1/96 to 2/28/97	\$183,988
3/1/97 to 12/31/97	<u>\$ 37,754</u>

Total \$398,653

There will be J & J manpower costs associated with study design, monitoring, and reporting.



J & J History with AHF

We have considered Dr. Wynder to be a friend through contact on previous issues. McNeil Consumer has sponsored epidemiology work by AHF. Their performance was excellent, the findings did not support the hypothesis.

Suggested Next Steps

- Your agreement in principle to proceed
- Executive review of study plans presented by Dr. Wynder and study team
- Negotiations of cost and J & J involvement details
- Final agreement/signed proposal
- Study design finalization
- Begin study by mid-year 1995

This requests your approval to proceed in principle and schedule a review with AHF.

Donald F. Jones

es  
attachment

cc: C. Hammes  
J. Hopkins  
J. Leebaw  
M. McTernan  
J. O'Shaughnessy  
K. Schroeder  
W. Slivka

0024.dj

# Exhibit 30

1           IN THE UNITED STATES DISTRICT COURT  
2           FOR THE EASTERN DISTRICT OF NEW JERSEY

3                               -   -   -

4  
5           IN RE:   JOHNSON &                       :  
6           JOHNSON TALCUM POWDER               :  
7           PRODUCTS MARKETING,               :  
8           SALES PRACTICES, AND               :   NO. 16-2738  
9           PRODUCTS LIABILITY               :   (FLW) (LHG)  
10          LITIGATION                       :  
11                               :  
12          THIS DOCUMENT RELATES           :  
13          TO ALL CASES                       :

14                               -   -   -

15                               September 25, 2018

16                               -   -   -

17                               Videotaped deposition of  
18          JOSHUA E. MUSCAT, Ph.D., taken pursuant  
19          to notice, was held at the law offices of  
20          Drinker Biddle & Reath, One Logan Square,  
21          Philadelphia, Pennsylvania, beginning at  
22          9:45 a.m., on the above date, before  
23          Michelle L. Gray, a Registered  
24          Professional Reporter, Certified  
                Shorthand Reporter, Certified Realtime  
                Reporter, and Notary Public.

   -   -   -

                              GOLKOW LITIGATION SERVICES  
                              877.370.3377 ph | 917.591.5672 fax  
  deps@golkow.com

1 APPEARANCES:  
2

3 LEVIN PAPANTONIO THOMAS  
4 MITCHELL RAFFERTY & PROCTOR, PA  
5 BY: CHRISTOPHER V. TISI, ESQ.  
6 WESLEY BOWDEN, ESQ.  
7 316 South Baylen Street, Suite 600  
8 Pensacola, Florida 32502  
9 (888) 435-7001  
10 Ctisi@levinlaw.com  
11 Wbowden@levinlaw.com  
12

13 - and -  
14

15 ASHCRAFT & GEREL, LLP  
16 BY: MICHELLE A. PARFITT, ESQ.  
17 JAMES F. GREEN, ESQ.  
18 4900 Seminary Road, Suite 650  
19 Alexandria, Virginia 22311  
20 (703) 931-5500  
21 mparfitt@ashcraftlaw.com  
22 jgreen@ashcraftlaw.com  
23

24 LUNDY, LUNDY, SOILEAU & SOUTH, LLP  
BY: NICHOLAS J. KOHRS, ESQ.  
501 Broad Street  
Lake Charles, Louisiana 70601  
(337) 439-0707  
nkohrs@lundylawllp.com  
Representing the Plaintiffs'  
Steering Committee

1 APPEARANCES: (Cont'd.)

2

SHOOK, HARDY & BACON, LLP

3 BY: MARK HEGARTY, ESQ.

2555 Grand Boulevard

4 Kansas City, MO 64108

(816) 474-6550

5 Mhegarty@shb.com

6 - and -

7 SHOOK, HARDY & BACON, LLP

8 BY: BRITTANY N. VANEK, ESQ.

600 Travis Street, Suite 3400

Houston, Texas 77002

9 (713) 227-9508

10 Bvanek@shb.com

11 - and -

12 DRINKER BIDDLE & REATH LLP

BY: JULIE L. TERSIGNI, ESQ.

600 Campus Drive

13 Florham Park, NJ 07932-1047

(973) 549.7106

14 Julie.tersigni@dbr.com

Representing the Defendant, Johnson

15 & Johnson entities

16

THOMPSON & KNIGHT, LLP

17 BY: TIMOTHY E. HUDSON, ESQ.

1722 Routh Street, Suite 1500

18 Dallas, Texas 75201

(214) 969-1540

19 Tim.hudson@tklaw.com

Representing the Witness

20

21

22

23

24

1 APPEARANCES: (Cont'd.)

2

GORDON & REES, LLP  
3 BY: MICHAEL KLATT, ESQ.  
816 Congress Avenue, Suite 1510  
4 Austin Texas 78701  
(512) 391-0197  
5 Mklatt@grsm.com

6 - and -

7 GORDON & REES, LLP  
BY: SARA ANDERSON FREY, ESQ.  
8 Three Logan Square  
1717 Arch Street, Suite 610  
9 Philadelphia, Pennsylvania 19103  
(215) 717-4009  
10 Sfrey@grsm.com

11 - and -

12 COUGHLIN DUFFY L.L.P.  
BY: MARK K. SILVER, ESQ.  
13 350 Mount Kemble Avenue  
Morristown, New Jersey 07962  
14 (973) 267-0058  
msilver@coughlinduffy.com  
15 Representing the Defendant, Imerys  
Talc America, Inc.

16

17 SEYFARTH SHAW, LLP  
BY: THOMAS T. LOCKE, ESQ.  
18 975 F Street, NW  
Washington, D.C. 20004  
19 (202) 463-2400  
tlocke@seyfarth.com  
20 Representing the Defendant, PCPC

21

22

23

24



1 TELEPHONIC APPEARANCES:

2

3 BEASLEY ALLEN, P.C.

BY: P. LEIGH O'DELL, ESQ.

4 234 Commerce Street

Montgomery, Alabama 36103

5 (334) 269-2343

leigh.odell@beasleyallen.com

6 Representing the Plaintiffs'

Steering Committee

7

8

ALSO PRESENT:

9

10 VIDEOTAPE TECHNICIAN:

David Lane

11

LITIGATION TECHNICIAN:

12 Zach Hone

13

14

15

16

17

18

19

20

21

22

23

24

1 - - -  
2 I N D E X  
3 - - -  
4

Testimony of: JOSHUA E. MUSCAT, Ph.D.

By Mr. Tisi 15, 613

By Mr. Hegarty 570

10 - - -  
11 E X H I B I T S  
12 - - -  
13

NO.	DESCRIPTION	PAGE
Muscat-1	Curriculum Vitae Joshua E. Muscat, Ph.D.	20
Muscat-2	Letter, 5/30/18 Subpoena Notice of Deposition	21
Muscat-3	Privilege Log Of Joshua Muscat 7/20/18 P1.0169-.52	23
Muscat-4	Curriculum Vitae Of Joshua E. Muscat, Ph.D. P1.0173-.8	75

1 Q. Okay. Now, going back to  
2 the American Health Foundation. In this  
3 first time frame, in the 1990s, leading  
4 up to the filing of the 2000 NTP report,  
5 the American Health Foundation had been  
6 under a consulting agreement with J&J on  
7 issues related to talc and ovarian  
8 cancer, true?

9 MR. HEGARTY: Objection to  
10 form.

11 MR. HUDSON: Objection to  
12 form.

13 THE WITNESS: I'm not  
14 familiar with that.

15 BY MR. TISI:

16 Q. You don't know whether or  
17 not Dr. Wynder had signed a consulting  
18 agreement with Johnson & Johnson?

19 MR. HUDSON: Objection to  
20 form.

21 THE WITNESS: No.

22 BY MR. TISI:

23 Q. You've actually met with,  
24 during that time frame, in the 1990s, you

1 actually met with Johnson & Johnson  
2 people on talc-related issues, correct?

3 A. That's correct.

4 Q. Okay. In fact, you --  
5 actually, we'll talk about that. You  
6 actually drafted a proposed study on that  
7 issue, correct?

8 A. That's correct.

9 Q. A case-controlled study,  
10 correct?

11 A. That's correct.

12 Q. A \$400,000 study on the  
13 issue that had been discussed in the  
14 medical community for decades before,  
15 correct?

16 MR. HEGARTY: Objection to  
17 form.

18 THE WITNESS: I don't know  
19 how -- whether it was discussed  
20 for decades. But we did draft a  
21 proposal.

22 BY MR. TISI:

23 Q. They never funded it, did  
24 they?

1 A. No.

2 Q. They never actually gave you  
3 a formal answer, did they?

4 MR. SILVER: Objection to  
5 form.

6 BY MR. TISI:

7 Q. To whether or not they would  
8 fund it?

9 A. I never received a formal  
10 answer.

11 Q. You just kind of left it  
12 kind of hanging out there, right?

13 MR. HUDSON: Objection to  
14 form.

15 THE WITNESS: It was -- I  
16 mean I'm sure that information was  
17 transmitted to the American Health  
18 Foundation but not to me  
19 personally.

20 BY MR. TISI:

21 Q. Okay. Well, we looked all  
22 over the document. We couldn't see any  
23 place where they denied funding, that  
24 they decided that they weren't -- that

1       they informed anybody --

2               A.       Okay.

3               Q.       -- about that.

4               MR. HEGARTY:  Objection to  
5               form.

6               MR. HUDSON:  Objection to  
7               form.

8       BY MR. TISI:

9               Q.       But as far as you know, they  
10       kind of, throughout the 1990s, they kind  
11       of kept the issue of whether they would  
12       fund that study out there, and it was  
13       just something you never got an answer  
14       to, correct?

15              MR. HUDSON:  Objection to  
16              form, asked and answered.

17              THE WITNESS:  I don't  
18              remember an exact date.

19              There was obviously a point  
20              where we knew it was not going to  
21              be funded so...

22       BY MR. TISI:

23              Q.       But you continued to speak  
24       with folks at J&J on talc-related issues,



1 correct?

2 MR. HEGARTY: Objection to  
3 form.

4 BY MR. TISI:

5 Q. In the -- in the 1990s?

6 A. I don't have any specific  
7 recollection.

8 Q. Do you know John Hopkins?

9 A. Yes.

10 Q. You met with him, correct?

11 A. He was at the meeting in  
12 Skillman, New Jersey.

13 Q. And you communicated back  
14 and forth, letters with him in the 1990s  
15 on issues related to epidemiology and  
16 talc?

17 MR. HEGARTY: Objection to  
18 form.

19 THE WITNESS: I don't recall  
20 specifically.

21 BY MR. TISI:

22 Q. You don't remember him  
23 e-mailing -- talk -- sending you letters  
24 and you going back and forth about the

# Exhibit 31

UNITED STATES BANKRUPTCY COURT  
WESTERN DISTRICT OF NORTH CAROLINA  
CHARLOTTE DIVISION

IN RE: : Case No. 21-30589-JCW

LTL MANAGEMENT LLC, : Chapter 11

Debtor, : Charlotte, North Carolina

: Friday, November 5, 2021

: 9:04 a.m.

[illegible]

LTL MANAGEMENT LLC, : AP 21-03032-JCW

Plaintiff, :

10	v.	:
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11 THOSE PARTIES LISTED ON :  
 12 APPENDIX A TO COMPLAINT and  
 JOHN AND JANE DOES 1-1000, :

13 Defendants. :

[illegible]

## VOLUME 2

TRANSCRIPT OF PROCEEDINGS  
BEFORE THE HONORABLE J. CRAIG WHITLEY,  
UNITED STATES BANKRUPTCY JUDGE

19	Audio Operator:	COURT PERSONNEL
----	-----------------	-----------------

21	Transcript prepared by:	JANICE RUSSELL TRANSCRIPTS
		1418 Red Fox Circle
		Severance, CO 80550
22		(757) 422-9089
		trussell31@tdsmail.com

24 | Proceedings recorded by electronic sound recording; transcript  
produced by transcription service.

1 APPEARANCES:

2 For the Debtor/Plaintiff: Jones Day  
BY: GREGORY M. GORDON, ESQ.  
3 DAN B. PRIETO, ESQ.  
2727 North Harwood St., Suite 500  
4 Dallas, TX 75201-1515

5 Jones Day  
BY: ROBERT W. HAMILTON, ESQ.  
6 325 John H. McConnell Blvd., #600  
Columbus, Ohio 43215

7 Jones Day  
8 BY: JAMES M. JONES, ESQ.  
250 Vesey Street  
9 New York, NY 10281

10 Rayburn Cooper & Durham, P.C.  
BY: JOHN R. MILLER, JR., ESQ.  
11 227 West Trade Street, Suite 1200  
Charlotte, NC 28202

12 For Johnson & Johnson and  
13 Johnson & Johnson Consumer  
Inc.: Moore & Van Allen PLLC  
BY: HILLARY B. CRABTREE, ESQ.  
14 100 N. Tryon Street, Suite 4700  
Charlotte, NC 28202

15 White & Case LLP  
BY: JESSICA LAURIA, ESQ.  
16 1221 Avenue of the Americas  
New York, NY 10020

17 White & Case LLP  
18 BY: LAURA FEMINO, ESQ.  
Southeast Financial Center  
19 Miami, FL 33131-2352

20 For The Continental  
Insurance Company: Parker Poe  
BY: ASHLEY A. EDWARDS, ESQ.  
21 PHILLIP M. FAJGENBAUM, ESQ.  
620 South Tryon Street, Suite 800  
22 Charlotte, NC 28202

23 For Certain Victims: Burns Charest LLP  
BY: DANIEL H. CHAREST, ESQ.  
24 900 Jackson Street, Suite 500  
Dallas, TX 75202

25

1 APPEARANCES (continued):

2 For Imerys Talc America, Blanco Tackabery  
3 Inc., Imerys Talc Canada, BY: ASHLEY S. RUSHER, ESQ.  
4 Inc., and Imerys Talc Vermont, 404 North Marshall Street  
5 Inc.: Winston-Salem, NC 27101

6 For Blue Cross Blue Shield Cordes Law, PLLC  
7 of Massachusetts, Inc.: BY STACY C. CORDES, ESQ.  
8 1800 East Boulevard  
9 Charlotte, NC 28203

10 Hill, Hill, Carter  
11 BY: ELIZABETH B. CARTER, ESQ.  
12 425 South Perry Street  
13 Montgomery, AL 36104

14 For The Plaintiffs' Steering COLE HAYES, ESQ.  
15 Committee: 601 S. Kings Dr., Ste. F PMB #411  
16 Charlotte, NC 28204

17 Otterbourg P.C.  
18 BY: ADAM C. SILVERSTEIN, ESQ.  
19 MELANIE L. CYGANOWSKI, ESQ.  
20 230 Park Avenue  
21 New York, NY 10169

22 Levin Papantonio Rafferty  
23 BY: CHRISTOPHER V. TISI, ESQ.  
24 316 Baylen Street  
25 Pensacola, FL 32502

For Certain Claimants: Essex Richards, P.A.  
BY: JOHN C. WOODMAN, ESQ.  
1701 South Boulevard  
Charlotte, NC 28203

Kazan McClain  
BY: JOSEPH SATTERLEY, ESQ.  
55 Harrison Street, Suite 400  
Oakland, CA 94607

Fears Nachawati PLLC  
BY: DARREN P. McDOWELL, ESQ.  
NABIL MAJED NACHAWATI II, ESQ.  
5489 Blair Road  
Dallas, TX 75231

1 APPEARANCES (continued):

2 For Maune Raichle, et al.: Waldrep Wall  
3 BY: THOMAS W. WALDREP, JR., ESQ.  
4 KEVIN L. SINK, ESQ.  
5 JENNIFER B. LYDAY, ESQ.  
6 370 Knollwood Street, Suite 600  
7 Winston-Salem, NC 27103

8 For Certain Talc Claimants: Hamilton Stephens  
9 BY: ROBERT A. COX, JR., ESQ.  
10 525 North Tryon Street, Ste. 1400  
11 Charlotte, NC 28202

12 Robinson Calcagnie, Inc.  
13 BY: MARK P. ROBINSON, JR., ESQ.  
14 19 Corporate Plaza Drive  
15 Newport Beach, CA 92660

16 For Margaret Watson: Hamilton Stephens  
17 BY: GLENN C. THOMPSON, ESQ.  
18 525 North Tryon Street, Ste. 1400  
19 Charlotte, NC 28202

20 For Aylstock Witkin, etc.: Offit Kurman  
21 BY: PAUL BAYNARD, ESQ.  
22 301 South College St., Suite 2600  
23 Charlotte, NC 28202

24 KTBS Law LLP  
25 BY: ROBERT J. PFISTER, ESQ.  
1801 Century Park East  
Los Angeles, CA 90067-2328

For Arnold & Itkin: Moon Wright & Houston PLLC  
BY: ANDREW T. HOUSTON, ESQ.  
121 West Trade Street, Suite 1950  
Charlotte, NC 28202

For Various Plaintiffs: Meirowitz & Wasserberg, LLP  
BY: KUSH SHUKLA, ESQ.  
535 Fifth Ave, 23rd Floor  
New York, NY 10017

For Aleathea Goodins: D. Miller & Associates, PLLC  
BY: ROCHELLE GUITON, ESQ.  
2610 W. Sam Houston Pkwy. S #200  
Houston, TX 77042

25



1 APPEARANCES (continued):

2 For OnderLaw, LLC:

Parkins Lee & Rubio LLP  
BY: LENARD M. PARKINS, ESQ.  
CHARLES M. RUBIO, ESQ.  
700 Milam Street, Suite 1300  
Houston, TX 77002

5 J. C. WHITE LAW GROUP PLLC  
BY: JAMES C. WHITE, ESQ.  
100 Europa Drive, Suite 401  
Chapel Hill, NC 27517

7 For Travelers Casualty &  
8 Surety Company:

FisherBroyles LLP  
BY: DEBORAH L. FLETCHER, ESQ.  
338 Sharon Amity Road, #518  
Charlotte, NC 28211

10 For Certain Claimants:

Andrews Myers, P.C.  
BY: LISA M. NORMAN, ESQ.  
1885 Saint James Place, 15th Flr.  
Houston, TX 77056

12 The Layton Law Firm, PLLC  
13 BY: CHRISTOPHER D. LAYTON, ESQ.  
2701 Coltsgate Road, Suite 210  
14 Charlotte, NC 28211

15 For Certain Insurers:

Katten Muchin Rosenman LLP  
BY: KATHERINE A. SCHERLING, ESQ.  
575 Madison Avenue  
New York, NY 10022-2585

17 Ward and Smith, P.A.  
18 BY: PAUL A. FANNING, ESQ.  
Post Office Box 2020  
19 Asheville, NC 28802-2020

20 For Kristie Doyle:

JD Thompson Law  
BY: LINDA SIMPSON, ESQ.  
Box 33127  
Charlotte, NC 28233

22 For Certain Claimants:

Cohen, Placitella & Roth, P.C.  
23 BY: CHRISTOPHER PLACITELLA, ESQ.  
127 Maple Avenue  
24 Red Bank, NJ 07701

25

1 APPEARANCES (continued):

2 For Sue Sommer-Kresse:

Higgins & Owens, PLLC  
BY: Sara (Sally) Higgins, ESQ.  
524 East Boulevard  
Charlotte, NC 28209

4

5

Motley Rice, LLC  
BY: NATHAN D. FINCH, ESQ.  
401 9th St., NW Suite 1001  
Washington, D.C. 20009

6

7

Motley Rice, LLC  
BY: DANIEL LAPINSKI, ESQ.  
210 Lake Drive East Suite 101  
Cherry Hill, NJ 08002

8

9

10 For Brandi Carl:

Golomb Spirt Grunfield  
BY: RICHARD M. GOLOMB, ESQ.  
1835 Market Street, Suite 2900  
Philadelphia, PA 19103

11

12 For Certain Claimants:

Levy Konigsberg LLP  
BY: JEROME BLOCK, ESQ.  
605 Third Avenue, 33rd Floor  
New York, NY 10158

13

14

15 ALSO PRESENT:

SHELLEY K. ABEL  
Bankruptcy Administrator  
402 West Trade Street, Suite 200  
Charlotte, NC 28202

16

17

18 APPEARANCES (via telephone):

19 For The Continental  
20 Insurance Company:

DAVID CHRISTIAN, ESQ.  
3515 West 75th Street, Suite 208  
Prairie Village, KS 66208

21

22

Clyde & Co US LLP  
BY: CLINTON CAMERON, ESQ.  
55 West Monroe Street, Suite 3000  
Chicago, IL 60603

23

24

25

1 APPEARANCES (via telephone continued):

2 For Arnold & Itkin: Pachulski Stang Ziehl & Jones  
3 BY: LAURA DAVIS JONES, ESQ.  
4 919 North Market St., 17th Floor  
5 Wilmington, DE 19801

6 Pachulski Stang Ziehl & Jones  
7 BY KAREN B. DINE, ESQ.  
8 780 Third Avenue, 34th Floor  
9 New York, NY 10017-2024

10 For Certain Insurers: Mendes & Mount LLP  
11 BY EILEEN T. McCABE, ESQ.  
12 STEPHEN T. ROBERTS, ESQ.  
13 750 Seventh Avenue  
14 New York, NY 10019

15 For the State of Texas: Office of Texas Attorney General  
16 BY: AUTUMN D. HIGHSMITH, ESQ.  
17 P. O. Box 12548 MC008  
18 Austin, TX 78711-2548

19 For Bausch Health: Simpson Thacher & Bartlett LLP  
20 BY: SANDEEP QUSBA, ESQ.  
21 425 Lexington Avenue  
22 New York, NY 10017

23 For Cyprus Mines Corporation: Northen Blue LLP  
24 BY: VICKI L. PARROTT, ESQ.  
25 1414 Raleigh Road, Suite 435  
Chapel Hill, NC 27517

Kasowitz Benson Torres LLP  
BY: MICHAEL E. HUTCHINS, ESQ.  
1230 Peachtree St., NE, Ste. 2445  
Atlanta, GA 30309

Reed Smith LLP  
BY: PAUL M. SINGER, ESQ.  
225 Fifth Avenue  
Pittsburgh, PA 15222-2716

23 For Westchester Fire Insurance Company: Manier & Herod, P.C.  
24 BY: ROBERT W. MILLER, ESQ.  
25 1201 Demonbreun St., Suite 900  
Nashville, TN 37203

1 APPEARANCES (via telephone continued):

2 For Rio Tinto America Inc. Nexsen Pruet, PLLC  
3 and Three Crowns Insurance BY: HARRIS M. WATKINS, ESQ.  
Company: P. O. Box 3463  
Greensboro, NC 27402

4  
5 WilmerHale  
6 BY: DANIELLE SPINELLI, ESQ.  
1875 Pennsylvania Avenue, NW  
Washington, DC 20006

7 For Employers Insurance The Shapiro Law Firm  
8 Company of Wausau, et al.: BY: JANET A. SHAPIRO, ESQ.  
325 N. Maple Drive, #15186  
Beverly Hills, CA 90209

9  
10 For Certain Claimants: Blossom Law PLLC  
11 BY: RASHAD BLOSSOM, ESQ.  
301 S. McDowell St., Suite 1103  
Charlotte, NC 28204

12 For Barnes Law Group JD Thompson Law  
13 Plaintiffs: BY: JUDY THOMPSON, ESQ.  
Box 33127  
Charlotte, NC 28233

14  
15 For Imerys Talc America, Latham & Watkins LLP  
16 Inc., Imerys Talc Canada, BY: KIMBERLY A. POSIN, ESQ.  
Inc., and Imerys Talc Vermont, JEFFREY E. BJORK, ESQ.  
Inc.: 355 South Grand Avenue, Suite 100  
Los Angeles, CA 90071-1560

17  
18 For Travelers Casualty & Simpson Thacher & Bartlett LLP  
Surety Company: BY: ANDREW T. FRANKEL, ESQ.  
KATHRINE A. McLENDON, ESQ.  
19 425 Lexington Avenue  
20 New York, NY 10017

21

22

23

24

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1 the focus of your testimony this morning.

2 We gave the Court a brief timeline of what happened during  
3 your tenure, the Health Canada report.

4 By the way, let me ask you. You also understand that Chief  
5 Judge Wolfson in the District of New Jersey also concluded that  
6 there was sufficient evidence to go to the jury on the question  
7 of whether or not talc causes ovarian cancer --

8 MR. HAMILTON: Your --

9 BY MR. TISI:

10 Q -- during your tenure?

11 MR. HAMILTON: Your Honor?

12 THE COURT: Sustained.

13 MR. TISI: Okay.

14 BY MR. TISI:

15 Q Now we have given the Court a brief timeline of what  
16 happened in your tenure. Let's get back to discussing the  
17 primary reason why we're here.

18 Your boss between 2017 and 2019 is someone who we've heard  
19 about, Joanne Waldstreicher, correct?

20 A Correct.

21 Q Okay. And, and she works for Johnson & Johnson, the  
22 parent, true?

23 A She is the Chief Medical Officer for J&J, the, the parent.  
24 I'm not sure in terms of who signs her paycheck and what her  
25 contract says now.



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1 Q And unlike you, she's an employee of, of that, or she's  
2 designated as an employee of the parent, true?

3 A She, she's the Chief Medical Officer for all of J&J. As I  
4 said, I don't know who signs her paycheck, what her contract  
5 says.

6 Q And she still works for, in that position, correct?

7 A She's still the Chief Medical Officer for Johnson &  
8 Johnson.

9 Q And she's not here in the courtroom today to tell us what  
10 the role of J&J was, is she?

11 A She's not here today.

12 Q Okay. And can you think of any reason why she hasn't come  
13 down to tell the Court about what the role of J&J is with  
14 respect to the safety of consumer products?

15 MR. HAMILTON: Your Honor, I'm going to object to --  
16 how would he know?

17 THE COURT: Well, it sounds like an argument.

18 And if you know the answer to the question to the  
19 question, do you?

20 THE WITNESS: I -- I -- I don't know. I was asked to  
21 come here and came.

22 BY MR. TISI:

23 Q Okay.

24 THE COURT: Okay.

25 BY MR. TISI:

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1 Q Well, the truth is --

2 THE COURT: Go ahead.

3 MR. TISI: I'm sorry, your Honor.

4 THE COURT: I said go ahead.

5 BY MR. TISI:

6 Q The truth is that separate from the JJCI Consumer Medical  
7 Safety Committee that you testified on direct for Old JJCI,  
8 there is a separate Medical Safety Council at the corporate  
9 level, true?

10 A Correct.

11 Q Okay. And these are two separate things. There's the,  
12 there's the Safety Council that you're Chair of and then  
13 there's the Safety Council that Dr. Waldstreicher is the Chair  
14 of, true?

15 A Correct.

16 Q And you are a member of the Safe, Safety Council that  
17 Dr. Waldstreicher is the Chair of, true?

18 A Yes.

19 Q Okay. And also on that Committee are, are the CMOs for  
20 Medical Devices, true?

21 A Yes.

22 Q And the CMO for, for, for Pharmaceuticals, true?

23 A Yes.

24 Q And together, the four of you make, make up the core  
25 membership of the J&J Medical Safety Committee?

# Exhibit 32

## Fibrous and Mineral Content of Cosmetic Talcum Products

1968

L. J. CRALLEY, Ph.D., M. M. KEY, M.D., D. H. GROTH, M.D.,  
W. S. LAINHART, M.D., and R. M. LIGO, M.D.

Occupational Health Program, National Center for Urban and Industrial Health,  
1014 Broadway, Cincinnati, Ohio 45202

☞ In searching for sources of fibers ubiquitous to our everyday environment and of respirable size, the authors examined 22 talcum products commonly available on retail shelves and found fiber contents ranging from 8 to 30% by count, with an average of 19%. Fibrous particulates were generally under  $1.0\ \mu$  in diameter with lengths ranging from 1.5 to  $6.0\ \mu$ . From 0.3 to 3.0% quartz was found in 21 of the samples and the remaining sample had 54.4% quartz. The samples were also analyzed for metals; with four exceptions, the levels of cobalt, nickel, chromium and manganese were low. Further research will be needed to assess the significance of these findings.

REPORTS OF FINDING pulmonary fibrous bodies, previously referred to as "asbestos" and now as "ferruginous" bodies, in the lungs of persons coming to autopsy in hospitals in a number of cities have recently been increasing. The first report of these morphologically distinctive fibrous bodies in the sputum and lungs of asbestos workers was made in 1906 by Marchand.<sup>1</sup> Current interest dates from 1963 when Thompson *et al.*<sup>2</sup> found these fibrous bodies in the lungs in 26.4% of the autopsies in a series of examinations in Cape Town. Subsequent investigations<sup>3-8</sup> provide evidence that the occurrence of these bodies in the lungs of urban residents is not restricted to those in isolated localities and is not a one-time chance observation.

The identity of the fibrous core of these coated bodies, however, was never determined by the investigators. The fibers were routinely considered as asbestos bodies on the basis of their morphological structure.

In searching for the sources of these ubiquitous fibers, Cralley *et al.*<sup>9</sup> reported that talcum powder contained a significant percent-

age of respirable fibers and was a potential source of the ferruginous bodies observed in the lungs of humans. This observation led to further study to characterize cosmetic talcum products.

The major purpose of the investigation reported here was to develop and present data on some of the constituents found in cosmetic talcum products and to discuss their health aspects in the light of today's knowledge. It is not our intent to make a general appraisal of health factors in the use of talcum products because of the many variables involved and the limited data available on the consumption of various "sources of talcs" in the formulation and use of cosmetic talcum products. The potential health aspects of some of the data, however, are discussed.

Twenty-two cosmetic talcum products (representing body powder, bath powder, and all purpose powder) purchased off-the-shelf, were analyzed for fibrous content, selected metals, and quartz. The data and a discussion of their possible significance follow.

### Analysis of Talcum Products

Talc is a natural mineral, hydrous magnesium silicate, with the general formula  $(OH)_2-$

Presented at the American Industrial Hygiene Conference May 13-17, 1968, St. Louis, Missouri.

TABLE I  
Designated Analyses of Cosmetic Talcum Products

Talcum Product No.	% Fibers	% Free SiO <sub>2</sub>	ppm*				mg/gm**						
			Co	Cr	Ni	Mn	Zr	Ti	Zn	Fe	Mg	Si	Al
1	19	0.3	13	9	13	16	<10	0.9	ND	20	>10	>10	50
2	21	0.4	<10	<10	<10	23	"	0.5	5	10	"	"	6
3	23	0.2	<10	<10	20	78	"	0.3	ND	7	"	"	5
4	19	2.2	67	240	1270	55	"	0.8	40	30	"	"	40
5	30	0.6	<10	<10	14	<10	"	0.2	ND	6	"	"	5
6	18	1.5	21	14	16	13	"	0.1	"	15	"	"	60
7	14	2.1	ND	<10	17	14	"	0.4	"	10	"	"	5
8	19	3.6	< 9	329	479	45	"	0.3	"	15	"	"	3
9	21	53.4	<11	ND	<10	14	20	20.0	ND	8	0.5	"	>100
10	8	0.9	25	<12	24	33	<10	30.0	40	12	>10	"	30
11	8	1.4	18	22	20	61	"	20.0	10	50	"	"	40
12	25	1.3	10	13	17	41	"	0.8	ND	10	"	"	8
13	26	1.7	ND	<10	<10	19	"	0.8	"	10	"	"	10
14	28	1.3	<10	10	<10	26	"	0.8	"	10	"	"	15
15	28	1.9	<10	<10	16	24	"	0.3	"	10	"	"	9
16	12	1.2	<11	<11	16	62	"	10.0	"	20	"	"	15
17	13	1.7	<10	10	19	70	30	10.0	"	20	"	"	12
18	16	0.4	16	< 9	14	18	<10	0.5	5	15	"	"	40
19	18	1.0	<10	<10	21	16	"	0.7	ND	10	"	"	6
20	16	1.2	22	10	29	50	"	0.8	40	10	"	"	40
21	25	3.3	10	9	19	26	"	0.6	5	10	"	"	10
22	14	0.5	14	1170	1210	84	"	0.3	ND	30	"	"	4

\*Microgram of metal per gram of sample.

\*\*Milligram of element per gram of sample.

Mg<sub>3</sub>Si<sub>4</sub>O<sub>10</sub>. Talc mineral is formed by the hydrothermal alteration of serpentine and tremolite or directly from unserpentinized ultrabasic rocks. Talc may also be formed by the thermal metamorphism of siliceous dolomites.<sup>10-12</sup> The characteristics of the mineral deposits vary widely from the pure talc formula and from each other according to the mineralogy involved. Some deposits may contain varying amounts of tremolite, chrysotile, pyrophyllite, or serpentine, or other basic material from which the talc may be derived. The deposits may also contain varying amounts of metals such as iron, nickel, cobalt, chromium, and manganese as associated minerals, as well as silica. Cosmetic talcum may be basically pure talc or may be a formulation of talc with other materials such as clay, chalk, stearates, etc. Zinc, titanium, manganese, and iron compounds may be added as pigments and opacifiers.

The particle-size distribution and percentage by count of fibers in the talcum particulates were determined by dispersing the talcum in water, filtering the mixture through an "AA" membrane filter, and measuring with a phase contrast microscope at 430

magnification. The percentage of free silica was determined by x-ray diffraction. Cobalt, chromium, nickel, and manganese were determined by means of atomic absorption spectrophotometry. Zirconium, titanium, zinc, iron, and magnesium were determined by means of semi-quantitative emission spectrography.

Table I gives analytical data on 22 different cosmetic talcum products. Figures 1 and 2 are representative photomicrographs of two talcum specimens showing the presence of fibers.

#### Size Distribution of Talcum Particulates

Seven of the twenty-two talcum products were selected for size-distribution measurements of the fibrous and non-fibrous particulate components.

The diameter of 80 to 95% of all the particulates in these samples was under 5.0 microns ( $\mu$ ). The median of the diameter of the non-fibrous particulates in the seven products ranged from 0.7 to 2.0  $\mu$ , with a median average around 1.0  $\mu$ .

A fiber is defined as a particulate having at least a 1:3 ratio of diameter to length. The fibrous particulates in the seven products were

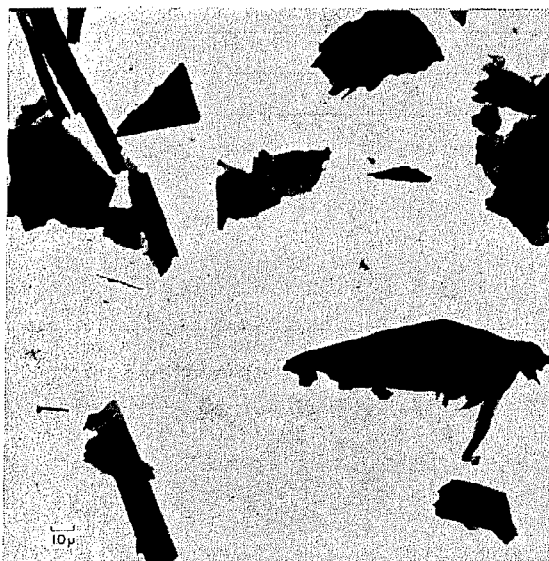


FIGURE 1. Photomicrograph of talcum specimen showing presence of fibers (430 X).



FIGURE 2. Photomicrograph of talcum specimen showing presence of fibers (430 X).

generally under  $1.0 \mu$  in diameter, with lengths ranging from  $1.5$  to  $6.0 \mu$ .

The 22 talcum products analyzed showed fiber contents ranging from 8 to 30% by count of the total talcum particulates with an average of 19%. Although the specific fibrous materials were not identified, they were predominantly fibrous talc, as shown by x-ray diffraction, with the probable presence in minor amounts of other fibrous minerals such as tremolite, anthophyllite, chrysotile, and pyrophyllite.

The electron microscope, with its higher power of resolution, shows a number of sub-micron diameter particulates not visible by means of phase contrast microscopy.

#### *Free Silica*

In 8 of the 22 talcum products (Table I), the presence of quartz ranged from 0.3 to 1.0%; in 13 products, 1.2 to 3.0% quartz, and in 1 product, 54.4% quartz.

#### *Metals*

With the exception of talcum products Nos. 4, 8, and 22 (Table I), the cobalt content of the products analyzed was under 25 parts per

million by weight (ppm), chromium under 22 ppm, nickel under 29 ppm, and manganese under 78 ppm. Product No. 4 had a nickel content of 1270 ppm; chromium 340 ppm; and cobalt, 67 ppm. Product No. 8 contained 479 ppm nickel and 329 ppm chromium. Product No. 22 contained 1210 ppm nickel and 1170 ppm chromium. Qualitative tests showed some of the chromium in the talcum products to be in the hexavalent state. The nickel, chromium, cobalt, and manganese in the talcum products may have come from the talc mineral deposit<sup>10</sup> or from the alloy metals of the pulverizing equipment used in reducing the talc.<sup>13</sup>

The zirconium content of the products was all under 10 milligrams per gram (mg/gm) except for products Nos. 9 and 17, which had 20 and 30 mg/gm respectively. The titanium, zinc, and iron ranged from a few tenths to 50 mg/gm of talcum and were probably present as pigments or opacifiers. The magnesium content of the products was over 10 mg/gm, except for product No. 9 which had only 0.5 mg/gm. The magnesium was probably present as an additive in the formulation or as a part of the talc molecule or other amphiboles in the products.



The aluminum and silicas were in all probability associated either with the talc molecule, or additives such as kaolin, or the base material from which the talc was derived.

#### Known Health Effects of Talc

Much of our knowledge of the health effects of talc is derived from studies of occupational exposures in its mining, milling, and industrial use. In extrapolating this knowledge to the cosmetic use of talcum powder, it must be recognized that the pattern of exposures in the use of talcum product varies markedly from person to person, not only in frequency of use but also in amount and in location.

In contrast to industrial exposures where the pattern is likely to be more continuous with accompanying peaks, exposure in the use of cosmetic talcum products is very intermittent with peak exposures dominating. The exposure pattern may continue a lifetime, especially if the use of talcum is established in the earlier years as a part of personal habits. The air-borne dosage to workers from industrial exposures to talc that have resulted in injury to health were undoubtedly much higher, however, than would be predicted from the use of cosmetic talcum products.

#### *Mining, Milling, and Industrial Use.*

The clinical entity of talc pneumoconiosis, "talcosis," has been observed repeatedly in workers with long exposure to talc in its mining, milling, and industrial use.<sup>14-17</sup> Elongated, terminally clubbed pulmonary fibrous bodies, both segmented and unsegmented and similar in morphology to ferruginous bodies, have been found in talc workers, but these workers had received a mixed exposure—to talc, tremolite, anthophyllite, and silica.<sup>18,19</sup> In one study<sup>20</sup> the mortality rate from cancer of the lung and pleura was four times greater for a group of talc workers than for the general population. In pulmonary cancer from asbestos, the role of fibers and trace metals is uncertain. Some investigators have assumed the fibers play a dominant and direct role; more recent investigations indicate that the fibers may have been only an index concealing a spectrum of unidentified agents and relationship.<sup>13</sup>

#### *Surgical and Cosmetic Use*

The only reported cutaneous reactions from the use of talcum powder are talc granulomas, and these have been rare.<sup>21,22</sup> Talcum powder, however, is no longer used on surgical gloves and should not be applied to broken skin. Occasionally, perfume oils used in talcum powder formulations sensitize the skin and produce dermatitis.<sup>23,24</sup>

#### Conclusions

With the exception of 4 of the 22 cosmetic talcum products analyzed, the levels of free silica, cobalt, nickel, chromium, and manganese were generally of a low magnitude and within a narrow range. It is not known whether the four products represent a significant proportion of sales in the industry or to what extent the sources of the talc in these four formulations are the same as sources of talc specified for use in other talcum products in the competitive market. The levels of silica, chromium, and nickel in these four products are sufficiently high, however, to be of concern in their potential to cause disease.

All of the 22 talcum products analyzed have an appreciable fiber content, ranging from 8 to 30% by count of the total talcum particulates, and averaging 19%. The fibrous material was predominantly talc but probably contained minor amounts of tremolite, anthophyllite, and chrysotile as these are often present in fibrous talc mineral deposits. Cosmetic talcum products should be included as a source of the fibers, from which may be derived ferruginous bodies observed in the lungs of humans. The meaning of the presence of these ferruginous bodies, however, is uncertain.

Industry has the know-how to safely handle fibrous material as well as toxic metals such as nickel, chromium, cobalt, and manganese once adequate criteria have been established. Unknown significant amounts of such materials in products that may be used without precautions may create an unsuspected problem. For this reason continued research and investigations and communication of findings are necessary in this area.

### Acknowledgments

The authors acknowledge, with appreciation, the technical assistance of Harrold B. Norris who made the free silica determinations; Patricia L. Maurer who made the atomic absorption spectrophotometric determinations for nickel, cobalt, chromium, and manganese; John R. Carlberg who made the emission spectrographic determinations for zirconium, titanium, zinc, iron, magnesium, and aluminum; and Stephen Bayer and Ralph Zumwalde for the fiber determinations.

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### Human Factors Association of Canada

On June 1 a group of 29 people gathered in Toronto, Canada, and formed the Human Factors Association of Canada. It is anticipated that the Association will have membership throughout Canada and will represent interests of the many disciplines concerned with man's functioning in his physical and machine environments. The following officers were elected: President, Dr. R. B. Bromiley, Vice-President, Dr. E. Llewellyn Thomas, Secretary-Treasurer, Mr. Ronald E. F. Lewis. The following were named Directors: Dr. J. R. Brown, Dr. A. C. Bryan, Dr. Ruth Hoyt and Mr. J. F. Martin. Correspondence should be addressed to: Secretary-Treasurer, Human Factors Association of Canada, c/o Defence Research Establishment Toronto, Box 2000 Downsview, Ontario, Canada.

# Exhibit 33

## CONSUMER TALCUMS AND POWDERS: MINERAL AND CHEMICAL CHARACTERIZATION

A. N. Rohl, A. M. Langer, I. J. Selikoff, A. Tordini, R. Klimentidis

Environmental Sciences Laboratory, Mount Sinai School of  
Medicine of the City University of New York  
New York, New York

D. R. Bowes, D. L. Skinner

Department of Geology, The University of Glasgow,  
Glasgow, Scotland

*Representative consumer talcums and powders, including 20 body powders, baby powders, facial talcums, and also one pharmaceutical talc, were analyzed to determine their mineralogical and chemical composition. Where known, all were formulated prior to 1973. Of the 20 products 10 contained detectable amounts of tremolite and anthophyllite, principally asbestiform, while some also contained fragmented forms of these minerals. The amounts ranged from tenths of a percent to over 14% by weight; two contained detectable amounts of chrysotile asbestos fiber. Eight contained quartz, seven ranging from 2 to 5%, with one as high as 35%. The analyses showed that the consumer products examined were rarely the pure mineral talc, but rather were mixtures of various minerals; some samples consisted of three to five minerals, only one of which was talc. Other common mineral phases included chlorite, platy serpentine, pyrophyllite, mica, and carbonate minerals. Kaolin additive was identified in two products. The single pharmaceutical talc examined contained only a trace amount of quartz.*

*The chemical composition of these products, including both major oxide and trace element content, correlated with their mineral components. Four samples contained substantial concentrations of nickel, cobalt, and chromium, suggesting lattice substitution or the presence of trace mineral phases. Geological provenance of the talcs may be ascertained on the basis of chemistry. Possible adverse health effects from intermittent use of these products, especially those that contain asbestiform and fragmented anthophyllite and tremolite, chrysotile, quartz, and trace metals, are presently unknown and warrant evaluation.*

## INTRODUCTION

Consumer talcums and powders are considered by the general public to be talc, an impression that is conveyed and strengthened by the product

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Requests for reprints should be sent to A. N. Rohl, Environmental Sciences Laboratory, Mount Sinai School of Medicine of the City University of New York, New York, New York 10029.

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names and ingredients listed on the container labels. However, knowledge of the geological occurrence and mineralogical character of source materials suggests the nature of talc to be highly variable and complex. Twenty-one consumer talcums and powders (Table 1) were mineralogically and chemically analyzed to determine whether these products are actually talc mineral.

Talc is a defined mineral entity, based on specific chemical, crystalline, and physical properties (Ford, 1957). The empirical chemical formula,  $\text{Mg}_3\text{Si}_4\text{O}_{10}(\text{OH})_2$ , is seldom observed in nature as a result of cation substitution. For example, magnesium is frequently replaced by iron, nickel, chromium, or manganese in the crystal structure. Talc is a sheet silicate, with a structural unit consisting of three layers; a sheet of octahedrally coordinated magnesium hydroxide groups is sandwiched between two layers of tetrahedrally linked silica layers. The Van der Waals bond between the talc sheets are of low energy accounting for the ease with which talc as well as other sheet silicate minerals (micas, clays) cleave

TABLE 1. Designation of Contents in Brand Name or Label

Sample no.	Date of formulation
Products designated as talcs	
3	Not available
8	Not available
12	Approximately 1972
7	September 1972
17	Not available
6	April 16, 1973
19	May 1973
21	Not available
Products designated as powders (talc on label)	
4	December 1970
18	Not available
20	December 1970
5	February 1973
16	Not available
Products designated as powders (or dust)	
1	Between January 1968 and July 1970
14	October 3, 1970
15	Between October 1970 and March 1973
9	February or March 1973
11	July 1969
13	July 16, 1970
2	Not available
10	Approximately 1972

or break into platy fragments. This facile cleavage, with resultant high surface area, and its softness, small particle size, and whiteness confer upon talc its usefulness as a cosmetic material.

### GEOLOGICAL OCCURRENCE OF TALC

Talc rocks (including those commercially worked) are formed by several complex geological processes reacting upon many possible, chemically diverse preexisting rock types. Hydrothermal alteration of magnesia- and silica-rich ultramafic rocks, under a range of low-to-moderate temperatures and pressures, may produce talc. Thermal metamorphism of silica-rich dolomite [ $\text{CaMg}(\text{CO}_3)_2$ ] will produce talc as well. These processes, however, also commonly result in the formation of a number of other coexisting mineral phases, predominantly hydrous magnesium silicates. Some of these, for example, anthophyllite, tremolite, and serpentine minerals (including chrysotile), occur as microscopic intergrowths with talc, as macroscopic nodules, or even as discrete zones within or adjacent to talc (Table 2). Talc rock is therefore generally not monomineralic but is often a mixture of minerals that may vary widely with respect to kind and quantity. Phlogopite, a magnesium mica, and chlorite, a group of minerals related to the micas, are also commonly associated with talc. Some of these associated mineral phases are asbestiform amphiboles and chrysotile (see discussion of the terms asbestos and asbestiform in Appendix A). Conversely, talc has been described as a common accessory mineral in commercial asbestos deposits (Hurlbut and Williams, 1935).

Talc deposits may be zoned, with different mineral assemblages physically changing in occurrence and proportions over extremely variable

TABLE 2. Minerals that Commonly Occur in Talc Deposits

Mineral group	Phase	Formula
Carbonates	Calcite	$\text{CaCO}_3$
	Dolomite	$\text{CaMg}(\text{CO}_3)_2$
	Magnesite	$\text{MgCO}_3$
Amphiboles	Tremolite <sup>a</sup>	$\text{Ca}_2\text{Mg}_5\text{Si}_8\text{O}_{22}(\text{OH})_2$
	Anthophyllite <sup>a</sup>	$(\text{FeMg})_7\text{Si}_8\text{O}_{22}(\text{OH})_2$
Serpentine	Antigorite	$\text{Mg}_3\text{Si}_2\text{O}_5(\text{OH})_4$
	Chrysotile (uncommon)	$\text{Mg}_3\text{Si}_2\text{O}_5(\text{OH})_4$
	Lizardite (uncommon)	$\text{Mg}_3\text{Si}_2\text{O}_5(\text{OH})_4$
Others	Quartz	$\text{SiO}_2$
	Mica, e.g., phlogopite	$\text{K}_2(\text{Mg},\text{Fe})_6[\text{Si}_6\text{Al}_2\text{O}_{20}](\text{OH})_4$
	Chlorite, e.g., penninite	$(\text{Mg},\text{Al},\text{Fe})_{12}[(\text{Si},\text{Al})_8\text{O}_{20}](\text{OH})_{16}$
	Pyrophyllite	$\text{Al}_4[(\text{Si}_6\text{O}_{20})](\text{OH})_4$

<sup>a</sup>Occurring as fibrous and nonfibrous forms. Other trace mineral phases are often present but are not included.



distances, ranging from centimeters to tens of meters. Mineral phases in such deposits may include talc plates and fibers, tremolite and anthophyllite fibers, intergrowths of amphibole and talc, serpentine minerals (which may include chrysotile), and free silica (quartz) (Ross et al., 1968). The fiber intergrowth is often such that even extensive beneficiation may not yield a pure product. Thus, where fine-grained intergrowths of talc and tremolite occur, the processed product will likely contain residual tremolite. Further details concerning the crystal chemistry, structure, synthesis, and geological occurrence of talc are found in Appendix B.

### INDUSTRIAL AND COSMETIC GRADE TALCS

It is generally recognized that various commercial grades of talc are marketed in the United States (Appendix C). Hildick-Smith (1976) has stated that a talc suitable for pharmaceutical purposes, used in cosmetic and toiletry products, contains at least 90% talc mineral and no detectable asbestos. Such stated compositional restrictions are not placed on industrial grade talcs. One study demonstrated that a number of industrial talcs contained substantial quantities of tremolite, up to 87% by weight of the sample (Schulz and Williams, 1942).

In 1968, a study (Cralley et al., 1968) of 22 cosmetic talcum products demonstrated fiber contents ranging

from 8 to 30% by count with an average of 19%. The fibrous material was predominately talc but probably contained minor amounts of tremolite, anthophyllite and chrysotile as these are often present in fibrous talc mineral deposits.

With the exception of 4 of the 22 cosmetic talcum products analyzed, the levels of free silica, cobalt, nickel, chromium, and manganese were generally of a low magnitude and within a narrow range. . . . The levels of silica, chromium, and nickel in these four products are sufficiently high, however, to be of concern in their potential to cause disease.

Thus, as late as 1968 some consumer talcum products marketed in the United States contained asbestiform minerals, free silica, and trace metals.

### HUMAN DISEASE ASSOCIATED WITH TALC EXPOSURE

For nearly half a century a number of reports have shown that occupational exposure to talc dust is associated with a fine diffuse interstitial lung scarring known as talcosis. Fibrous talcs appeared to be more pathogenic than platy talcs, producing in addition to talcosis, increased risk of malignant tumors in exposed workers (Kleinfeld and

Messite, 1960; Kleinfeld et al., 1967). Studies concerning the biological consequences associated with talc dust exposure, including cancer, are referred to in Appendix D.

### OBJECTIVES OF THE PRESENT STUDY

Twenty-one samples of consumer talcums and powders, including baby powders, body powders, facial powders, and a pharmaceutical talcum, were obtained at retail stores in the New York City area. These samples were acquired and studied during the period 1971–1975 (Table 1). The major purpose of the study was to determine the mineralogical and chemical composition, with particular emphasis on the quantitative determination of tremolite, anthophyllite, serpentine minerals, and quartz. Another objective was to establish a base line for consumer talcums and powders, based on a sampling of products available during the period 1971–1975. This base line provides an index for evaluating possible changes in subsequent formulations.

### METHODOLOGY AND RESULTS OF MINERAL AND CHEMICAL CHARACTERIZATION

The analytical techniques employed for mineral identification and quantification included optical microscopy, transmission electron microscopy with selected area electron diffraction, X-ray diffraction, and scanning electron microscopy with X-ray analysis capabilities. Chemical determinations (bulk chemistry and trace metals) were made with a number of standard instruments and geochemical techniques, including spectrophotometry [ $\text{SiO}_2$ ,  $\text{TiO}_2$ ,  $\text{Al}_2\text{O}_3$ , total Fe ( $\text{Fe}_2\text{O}_3$  by difference from FeO),  $\text{P}_2\text{O}_5$ ]; atomic absorption (MnO, MgO, CaO); flame photometry ( $\text{Na}_2\text{O}$ ,  $\text{K}_2\text{O}$ ); wet chemical assay (FeO); weight loss, volatiles ( $\text{H}_2\text{O}$ ,  $\text{CO}_2$ , organics). X-ray fluorescence was used for all trace metals (Bowes and Langer, 1974).

#### Optical Microscopy

Optical microscopy is a conventional technique for the identification of minerals and for the study of mineral relationships. A microscope equipped with bright field illumination and polarized light optics was used to analyze the cosmetic powders. Approximately 0.5 mg of powder was placed on a precleaned glass slide and immersed in index oils of known refractive indices. These were checked on a refractometer. The information obtained on particles with this method included most of the measurable optical properties, including indices of refraction, extinction angles of fibers, general morphology, and size characteristics of mineral phases (Fig. 1). In coarse-grained powders, fibers could be identified (tremolite, anthophyllite, talc). Two samples contained cornstarch, easily recognized

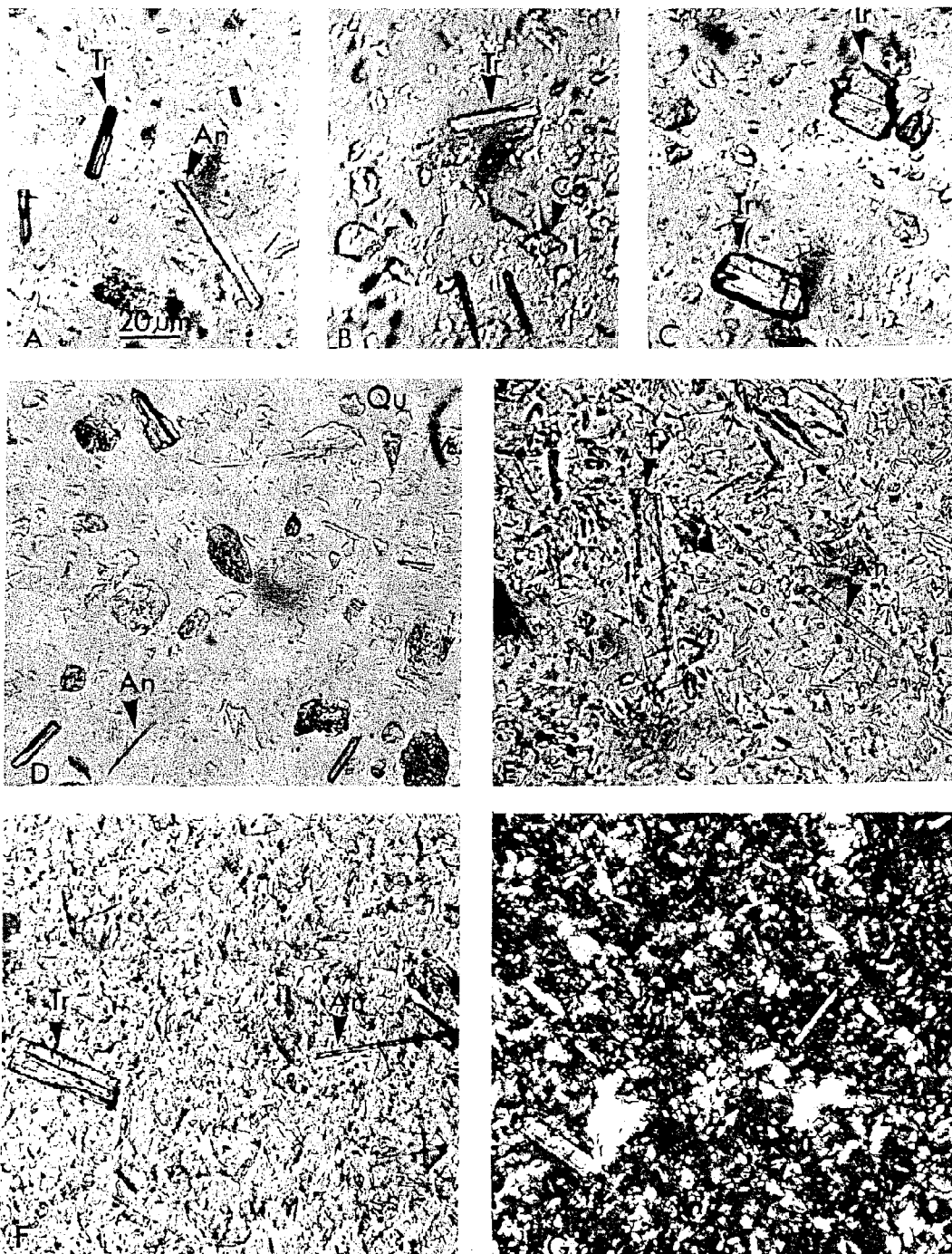


FIGURE 1. Optical photomicrographs of cosmetic talcums and powders grossly contaminated with asbestiform minerals. Photos obtained in plane polarized light (A-F) and between crossed polars (G). Scale in (A) for all photos. Fibers shown have optical properties consistent with tremolite (Tr) and anthophyllite (An). Quartz grains (Qu) and calcite fragments (Ca) are also shown. Most tremolite fibers tend to possess smaller length-to-width ratios than anthophyllite. Tremolite is observed as fragments (C). Photo obtained between crossed polars (G) also demonstrates the presence of fibers in the matrix material. Asbestiform length-to-width ratios measured up to 20:1 (F).

by morphological and optical characteristics. One product consisted entirely of cornstarch.

In most samples, however, the powders were too fine grained, with particle dimensions significantly less than 1.0  $\mu\text{m}$ , for the technique to be useful. The limiting factor for determination of optical constants, and hence for identification of particles, is the resolving power of the microscope. The presence of talc fibers, which may have indices of refraction similar to amphibole (tremolite, anthophyllite) fibers, also confounds analysis. Therefore, although this technique is an excellent diagnostic instrument in some instances these restrictions limited its usefulness.

Other investigators have experienced similar difficulties. For example, in a study of the asbestos content of talc (Stanley and Norwood, 1973), there was difficulty in applying optical microscopy to the problem. The authors concluded that optical microscopy

while it works well on pure samples of fairly massive fiber length from 3 to 5 microns, our observations by transmission electron microscopy have shown that *naturally occurring asbestiform minerals often lie below the working resolution capabilities of the light microscope* and furthermore while massive fiber bundles can often be observed by either light or electron microscopy the observation of individual fibers smaller than 0.5 by 0.2 micrometers often will require the high resolution capability of the transmission electron microscope (emphasis added).

It is further stated that "light microscopy was helpful only in screening samples with large particles and high concentrations of objectionable fibers."

By comparing the results of optical microscopy with those of quantitative X-ray diffraction and electron microscopy, we observed that large numbers of fibers go undetected. In addition to the restraints of resolution imposed by light microscopy, another major drawback relates to the strong tendency of asbestiform minerals to cleave or break along planes of weakness when they are crushed, producing large numbers of small fibers. For example, light microscopic examination of a talc sample (no. 8), which contains over 7% tremolite (see Table 4), demonstrates the presence of mineral fragments that are primarily not asbestiform (Fig. 1C). However, electron microscopic examination of the same sample demonstrates that many of the submicroscopic tremolite particles are fibrous (see Fig. 3E). The problem involving the determination of the relative proportions of each of these morphological phases in the same sample (mass vs. number) is presently unresolved. Basically, the large fibers are broken during milling yielding a new size distribution in the submicroscopic range.



### X-ray Diffraction

The application of X-ray diffraction analysis in step-scan mode for quantitative determination of asbestos in talc has been described in detail (Rohl and Langer, 1974), including the selection of talc and asbestos reference materials, the preparation of standard dilutions of asbestos minerals in talc to ensure sensitivity and reproducibility, the selection of characteristic X-ray reflections to be scanned, and instrumental technique.

*Selection of talc mineral standard.* Screening of various types of talcs for use as reference material was made by X-ray diffraction and transmission electron microscopic analysis. A continuous scan was first made to identify the major mineral phases present. Talcs that showed the presence of any serpentine mineral, tremolite, or anthophyllite were eliminated as reference materials. The possibility of false negatives for these minerals was checked by step scanning the diagnostic reflections (Table 3). Further verification of the absence of asbestiform minerals was made by transmission electron microscopy. These techniques permitted the selection of a matrix talc that was completely free of asbestiform minerals.

Chlorite minerals are hydrous iron-magnesium silicates, frequently associated with talcs. Their presence may interfere with the detection of serpentine minerals, both platy (antigorite) and fibrous (chrysotile). This is particularly true if they are present in equal or larger amounts than these latter minerals. Two intense basal reflections at 14.2 Å (001) and 7.1 Å (002) are characteristic of chlorite minerals. The latter reflection occurs close to the (002) reflection of serpentine minerals (7.3 Å). The 3.66 Å (004) reflection of serpentine was selected as diagnostic (Table 3), since the lower intensity (004) reflection of chlorite (3.53 Å) in this region was found not to cause interference.

*Selection of the asbestos standard.* Reference samples of pure asbestos minerals were obtained from various mineral collections and from the International Association for Research on Cancer (IARC). These were screened for purity and particularly for the presence of interfering contaminants according to the procedures previously described for talc. Two different specimens of chrysotile were used as reference materials: a triple air-jet milled sample from the Jeffrey Mine, Quebec (provided by the Johns-Manville Corp.) and a specimen from Coalinga, California (provided by the Calidria Division, Union Carbide Corp.).

*Sample preparation.* Among the variables that strongly influence the precision and accuracy of quantitative X-ray diffractometry are particle size, preferred orientation, and surface flatness. Variation due to particle size can be minimized by crushing and screening the asbestos and talc standards to ensure a uniform size distribution, with an effective crystallite dimension on the order of 5 μm or less. The effect of preferred orientation is more difficult to control. The tendency for preferred orientation is largely the function of mineral cleavage properties. Both the talc and the asbestos minerals have excellent cleavages, platy in talc and

TABLE 3. Calibration Curve Data for the Determination of Asbestiform Minerals and Quartz in Talc by X-ray Analysis<sup>a</sup>

Parameter	Mineral phase			
	Anthophyllite	Chrysotile	Quartz	Tremolite
Miller index of diagnostic reflection	(210)	(004)	(211) <sup>b</sup>	(110)
Corresponding <i>d</i> -spacing (Å)	8.26	3.66	1.54	8.38
Relative intensity	55	80	15	100
Step-scan interval (2 theta)	10.0–11.0	23.5–25.0	59.5–60.5	10.0–11.0

Percent mineral in talc and corresponding area of reflection							
Anthophyllite		Chrysotile		Quartz		Tremolite	
%	in. <sup>2c</sup>	%	in. <sup>2</sup>	%	in. <sup>2</sup>	%	in. <sup>2</sup>
5.0	0.92	0.25	0.01	5.0	2.75	0.1	0.13
10.0	2.35	0.5	0.03	10.0	3.75	0.5	0.30
15.0	3.99	1.0	0.08	20.0	7.11	2.2	0.43
20.0	4.65	2.0	0.22	25.0	9.30	2.7	0.67
25.0	5.12	5.0	0.94	30.0	13.20	4.3	1.25
30.0	7.22	7.0	1.52	40.0	16.90	5.0	1.65
35.0	9.92	8.5	2.21	—	—	7.0	2.08
—	—	8.9	2.34	—	—	10.0	2.80

Detection limit			
Wt % Anthophyllite	= Area (210) = 0.27 (%An) — 0.52	R <sup>2</sup> = 0.95	2.0%
Wt % Chrysotile	= Area (004) = 0.27 (%Ch) — 0.50	R <sup>2</sup> = 0.98	0.7%
Wt % Quartz	= Area (211) = 0.43 (%Q) — 0.60	R <sup>2</sup> = 0.96	1.4%
Wt % Tremolite	= Area (110) = 0.28 (%Tr) — 0.04	R <sup>2</sup> = 0.98	0.1%

<sup>a</sup>Instrumental settings: target/filter, Cu/Ni, 45 kV/20 mA; scintillation counter, 1450 VDC; monochromator, graphite; pulse-time analyzer, 20 V, 5 V (width, level); continuous scan, 1° 2  $\theta$ /min; step-scan, 0.02° 2  $\theta$  at 2,000 counts fixed.

<sup>b</sup>Rhombohedral index.

<sup>c</sup>Repeated measurements of areas under curves with a polar planimeter indicated average deviation of  $\pm$  0.02–0.05 in.<sup>2</sup>.

fibrous in the case of tremolite, anthophyllite, and chrysotile (see Rohl and Langer, 1974, Fig. 2). In attempting to reduce or eliminate the effects of preferred orientation in X-ray analysis, a number of sample preparation and instrumental techniques have been developed (Bragg, 1967; Brindley and Kurtossy, 1961; Cullity, 1956; Klug and Alexander, 1954). In the present study these techniques were tested, but none was found to provide adequate precision (reproducibility). Accordingly, a sample preparation technique was developed that was successfully used, in conjunction with X-ray diffraction in the step-scan mode, to detect diagnostic reflections of these minerals in a talc matrix over a range of concentrations (Table 3).



The reproducibility of reflection intensities was also greater than other preparation techniques tested.

Binary dilution standards of chrysotile, anthophyllite, and tremolite in talc were prepared gravimetrically. Asbestos fiber concentrations were prepared initially at 5.0, 4.0, 2.0, 1.0, 0.5, 0.2, and 0.1%. Fifty milligrams of the talc-asbestos mixtures were homogenized in 10 ml filtered water utilizing ultrasonic energy. This slurry was poured into a 30 cc syringe and filtered through a 0.22  $\mu\text{m}$  pore size membrane filter. To prevent stratification due to differential particle size and density effects, the syringe is held in a horizontal position, rotated, and shaken during filtration. The residue forms a flat cake of about 0.5 mm uniform thickness on the membrane filter. When dried, the sample is affixed to a glass slide for X-ray diffraction analysis (Rohl and Langer, 1974).

*Selection of X-ray reflections.* Because of crystal structure similarities in the minerals being studied (i.e., tremolite and anthophyllite), considerable overlapping and interference of X-ray reflections occur. The low symmetry and consequent complex X-ray diffractograms of such minerals as talc, chlorite, and mica, as well as possible interferences from admixed phases such as kaolinite, make it necessary to select a reflection or set of reflections for each mineral component that could be used as an index of the amount of that mineral in a mixture. Such diagnostic reflections were selected by referring to standard X-ray powder diffraction data. These diagnostic reflections were step-scanned at  $0.02^\circ$   $2\theta$  in a fixed count mode ( $2 \times 10^3$  counts). Precise positions and profiles of the diagnostic reflections were determined. In the fixed count mode, each of the angular intervals selected are scanned with equal accuracy. Thus weak reflections can be determined with equal precision as high intensity reflections. The statistical accuracy depends only on the total number of counts recorded, and the counting rate selected gives a percentage probable error of about 2%. Profiles of the diagnostic reflections, plotted as a function of number of counts vs.  $2\theta$ , are measured with a compensating polar planimeter. The intensity of a reflection is proportional to, but not necessarily a linear function of, its concentration. Other factors that may influence reflection intensities include instrumental conditions, particle size, degree of preferred orientation, sample thickness and flatness, and absorption characteristics (Klug and Alexander, 1954; Rohl and Langer, 1974).

Figure 2 shows calibration curves obtained for chrysotile, anthophyllite, tremolite, and quartz using the step-scan technique. Measured areas of diagnostic reflections are plotted against percent dilution in talc. As indicated in Table 3 tremolite may be determined at levels as low as 0.10% by weight, chrysotile from 0.25 to 0.50%, and anthophyllite, as low as 2% in talc. It is important to note that the limits of detection given in Table 3 are higher and based on a best fit regression analysis. For example, regression analysis indicates that the detection limit for chrysotile is 0.7%, whereas from 0.25 to 0.5% can be actually detected,

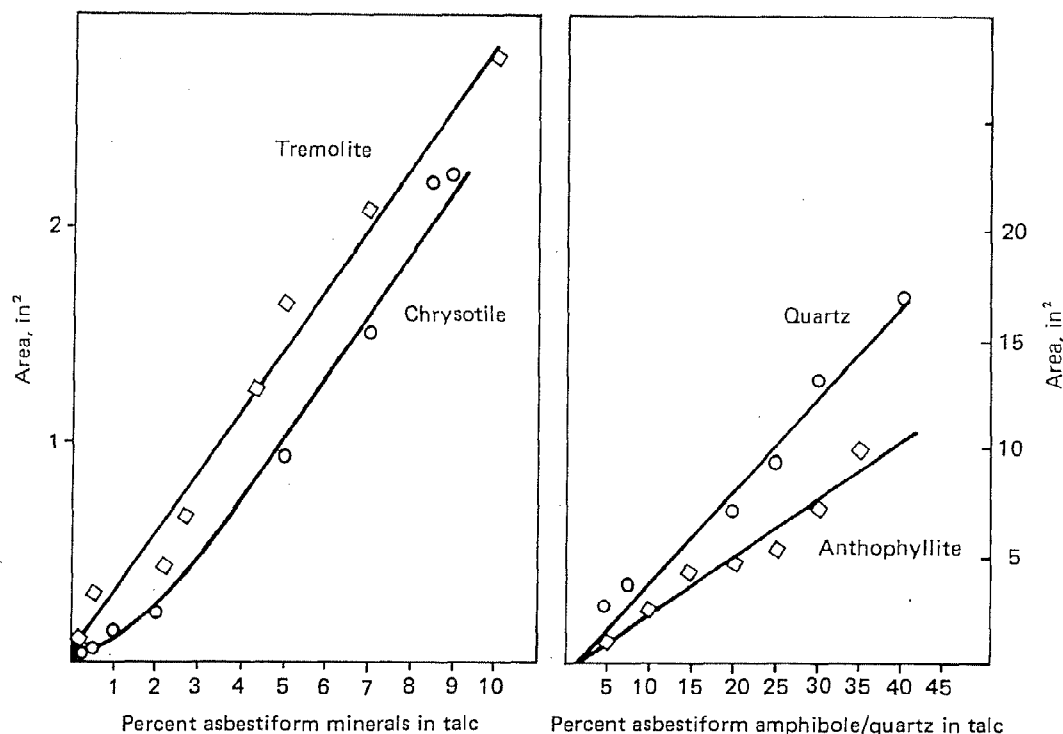


FIGURE 2. Calibration of asbestiform amphiboles and quartz in talc.

depending on particle size, degree of crystallinity, etc. The changes in slope at the lower end of the curves are not reflected so that axial intercepts are exaggerated on the high end of the abscissa.

By using X-ray diffraction in the step-scan mode, Stanley and Norwood (1973) were able to detect a minimum of 0.25% tremolite in talc and a minimum of 0.5% chrysotile and the other asbestiform minerals. However, such low levels of chrysotile were not detected when chlorite was present.

*Step scanning.* The contents of the containers were thoroughly mixed with a sample splitter to avoid stratification effects. Aliquots of each, weighing 50 mg, were prepared using the identical methodology described for preparation of the dilution standards. The filter-mounted samples were then step scanned over the goniometric intervals diagnostic for the standard asbestiform minerals and quartz. Instrument operating conditions were identical with those used for analyzing the dilution standards. Profiles plotted for the diagnostic intervals and reflection areas after peak stripping were measured by polar planimetry. The weight percents of anthophyllite, tremolite, and quartz contents were estimated by referring to the appropriate regression curve. The quantities of asbestiform materials in the 21 talcums and powders found by this technique are shown in Table 4. The results show that 10 of the 21 samples contain amphibole

TABLE 4. Summary of Mineralogical Composition of 21 Consumer Talcums and Powders

Minerals	Sample no.																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Talc	M <sup>a</sup>	—	M	M	M	M	M	P	M	M	M	M	M	M	M	M	M	M	M	M	M
Chlorite	P	—	—	P	Tr	P	P	—	P	P	P	P	P	P	P	—	P	P	P	P	P
Phlogopite	—	—	—	—	Tr	—	—	P <sup>b</sup>	—	—	P	P	—	—	—	—	—	—	—	—	—
Calcite	—	—	—	—	—	P	—	Tr	—	P	P	P	P	P	P	—	—	—	—	—	P
Dolomite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	P	—	—
Quartz	5.5	—	1.6	—	—	1.9	—	35.1	—	—	—	4.0	—	3.0	—	2.0	—	1.6	2.0	—	—
Kaolin	—	—	—	—	—	—	Tr	P	—	—	—	—	—	—	—	—	—	—	—	—	—
Tremolite	2.7	—	—	—	—	0.5	0.4	7.4	—	—	10.3	—	—	—	0.1	3.0	0.1	—	—	—	2.4
Anthophyllite	11.4	—	—	—	—	—	—	4.9	—	—	—	4.6	—	—	2.4	5.2	2.1	—	—	—	6.5
Chrysotile	—	—	—	—	—	—	—	—	—	—	—	<0.50	—	—	<0.50	—	—	—	—	—	—
Pyrophyllite	—	—	—	—	—	—	—	P	—	—	—	P	—	—	—	—	—	—	—	—	—
Rutile	—	—	—	—	—	—	Tr	—	—	—	—	—	—	—	—	—	—	—	—	—	—

<sup>a</sup>M = major; P = present; Tr = trace.<sup>b</sup>High K<sub>2</sub>O and Na<sub>2</sub>O suggests that this phase is a mica (muscovite/biotite).

minerals, ranging in amounts from a few tenths of a percent to over 14%. Tremolite was the most commonly found (9 of the 21), and anthophyllite occurred with tremolite in 6 of the 21. A serpentine mineral phase was indicated in two samples, in amounts at or near the lower limits of detection. Verification of the serpentine phase as chrysotile in the two samples in amounts corresponding to the observed concentrations was made by electron microscopy.

*Continuous scanning.* In order to study the presence of all mineralogical (and possibly other crystalline) components the samples were scanned from  $5^{\circ}$  to  $70^{\circ}$   $2\theta$  at a scanning rate of  $1^{\circ}$   $2\theta$  per minute. This technique, as expected, proved satisfactory for the identification of major components, but it was generally found to be incapable of detecting tremolite, anthophyllite, or serpentine minerals except in cases of gross contamination. The high noise level (low peak-to-background ratio) often prevents the detection of quantities on the order of 4–6% or less and also excludes this technique for quantitative analysis. As a result of high noise level three false positives, as indicated by continuous scanning, were subsequently shown to be negative for amphibole by step scanning and electron microscopy. In addition, continuous scanning may not generally detect serpentine minerals in the presence of chlorite or kaolinite.

#### Electron Microscopy and Electron Diffraction

The transmission electron microscope has been shown to possess the sensitivity required for fiber identification and for determination of particle size distribution of submicroscopic particles (Langer and Pooley, 1973; Langer et al., 1973).

Accordingly, aliquots of talcum samples were prepared for electron microscopic analysis by a technique that disperses particles in a drop of nitrocellulose solution on a glass slide. A second glass slide is placed on the first and the two are drawn lightly apart, leaving a film. This technique is intended to minimize the alteration of particle size distribution. The film is mounted on electron microscope grids and scanned at magnifications of X20,000.

Morphologically, amphibole minerals are generally quite dissimilar from other silicate minerals. Both anthophyllite and tremolite are rectilinear, often with amphibole-type step cleavage or, infrequently, with prismatic terminations. Tremolite fibers tend to be electron dense and shorter than anthophyllite (Fig. 3), while the latter has a tendency to be electron translucent and to show diffraction contrast figures (Langer and Pooley, 1973). Sheet silicate minerals (talc, chlorite, micas) tend to be equidimensional in shape, often with pseudohexagonal outlines (Fig. 4). Curled talc plates or talc fibers on edge may superficially resemble asbestiform minerals, but selected area electron diffraction patterns easily distinguish between the two (compare Fig. 5A, C, and D).

Electron microscopy, in combination with selected area diffraction,

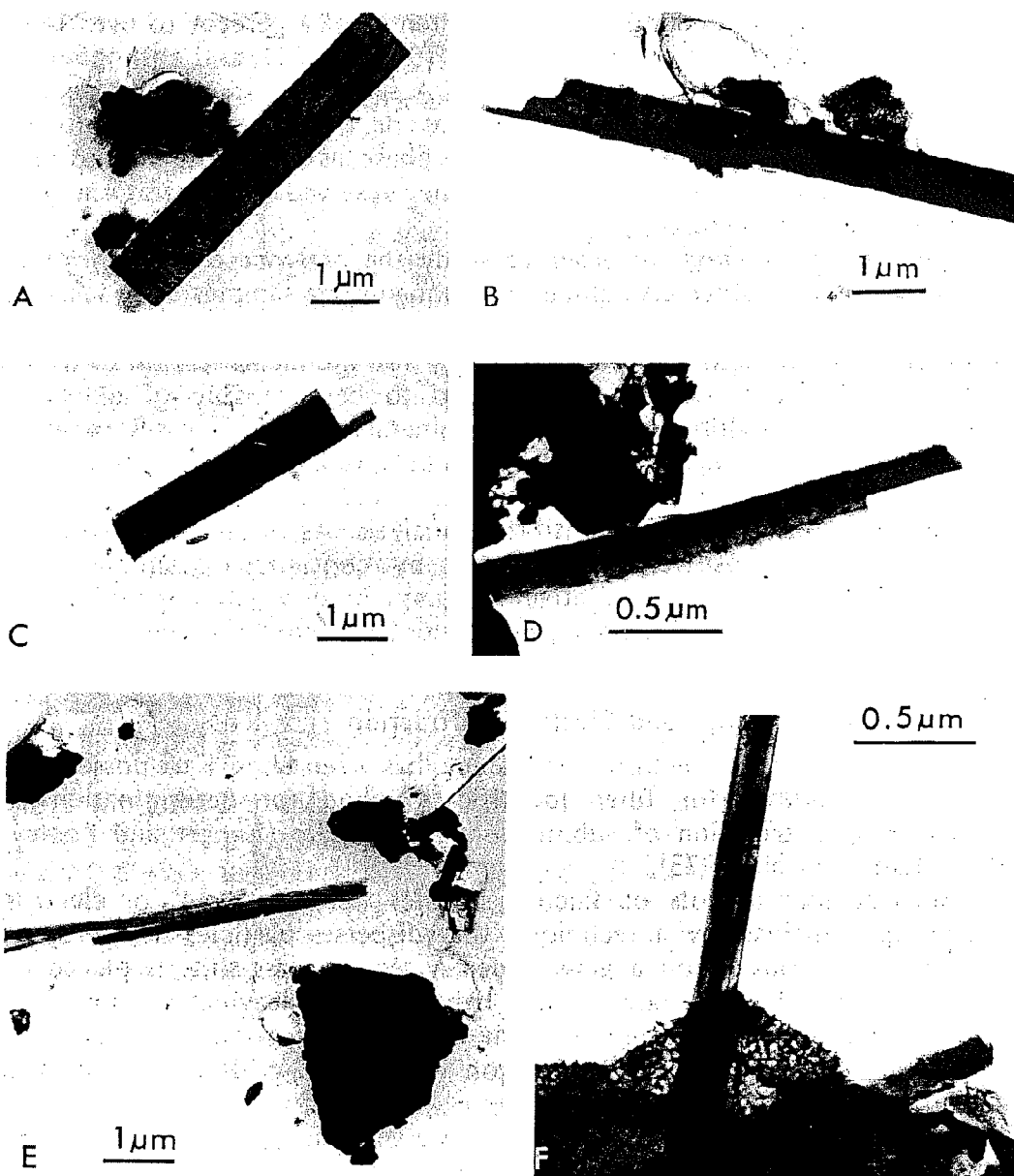


FIGURE 3. Transmission electron micrographs showing range in morphological characteristics of asbestiform tremolite and anthophyllite in talc. The entire range of morphological variations observed for these minerals is observed in the asbestos standards: rectilinear fibers with parallel ends and edges (A); step-cleavage ends (B); unit fibrils protruding from fiber body, (C); curvilinear fiber with amphibole cleavage end (D); high length-to-width ratio fibers (E); fibers protruding from interiors of talc plates (F). All of these morphological variations and forms (A-E) have been described in anthophyllite and tremolite asbestos samples. The amphibole structure was confirmed in all cases by selected area electron diffraction characterization. Scale as marked. Micrographs obtained on a JEOL JEM 120 U with an accelerating voltage at 120 kV.

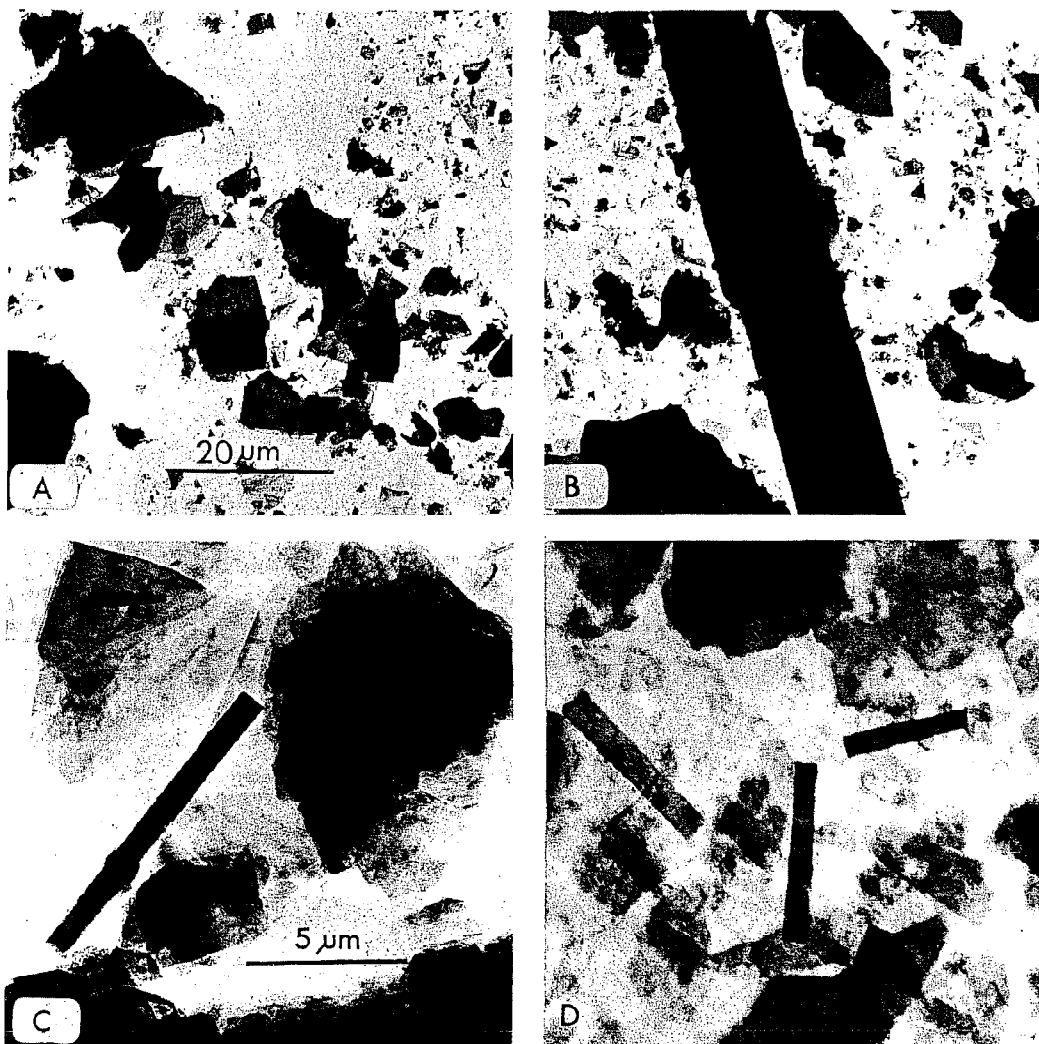


FIGURE 4. Transmission electron micrographs of cosmetic talc samples composed primarily of plates with an occasional large talc fiber (B, C); talc with many talc fibers (D); Scale is the same in (A) and (B) and in (C) and (D). All selected area electron diffraction patterns obtained on fibers yielded those consistent for talc plates (see Fig. 5, A and B). In all talc-containing samples examined by electron microscopy talc grains tended to range from 25 to 0.2  $\mu\text{m}$  in greatest dimension. Micrograph obtained on a JEOL JEM 120 U with an acceleration voltage at 120 kV.

was used to verify the presence of amphibole in the 10 samples shown to be positive by X-ray diffraction. Electron microscopy, while not quantitative, also showed that amphibole fibers were present in relative amounts that corresponded to their percentages as shown by X-ray diffraction.

The presence of traces of chrysotile, rather than platy serpentine, in samples 12 and 15 was verified by electron microscopy (Fig. 6). By



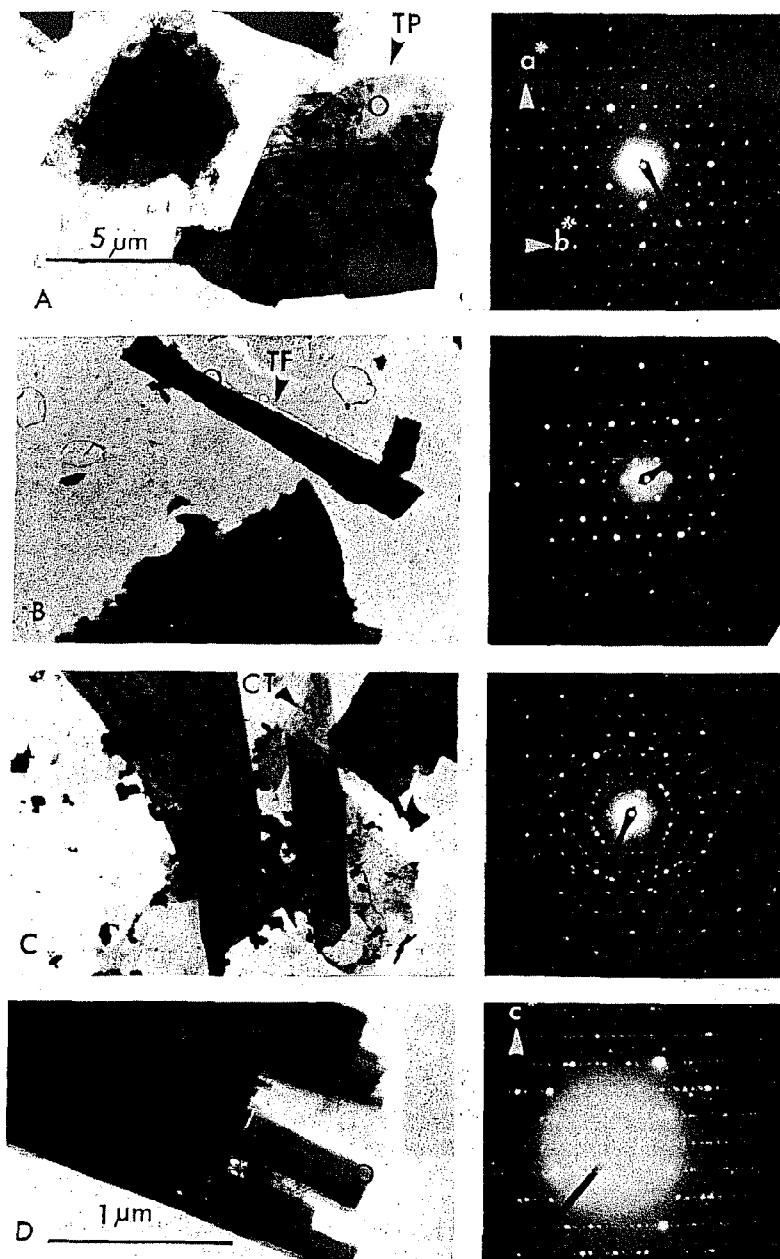


FIGURE 5. Transmission electron micrographs and accompanying selected area electron diffraction (SAED) patterns for cosmetic talc samples. The talc plate (TP) in (A) shows typical polygonal cleavage and diffraction contrast contours for the mineral species. The accompanying SAED pattern displays the characteristic reciprocal  $ab^*$  plane pseudohexagonal symmetry for talc. Talc  $a^*$  and  $b^*$  directions indicated on (A). Measurement of pattern indicates a 5.3 Å repeat along  $a^*$  and a 9.1 Å repeat for  $b^*$  (measured at  $[110]$ ). Talc fiber (TF) in (B) displays irregular ends and nonrectilinear edges. The SAED pattern is also pseudohexagonal; but some reflection intensities [e.g., the (060), (0.12.0)] are more pronounced. This may be due to both orientation and structural effects. The curled talc plate (CT) in (C) displays an incipient Debye-Scherrer ring pattern (the effects of both folding over of talc and small associated grains). The amphibole fiber (D) was diffracted only on one of the protruding unit fibrils. The  $c^*$  axis is shown, with repeat measured at 5.3 Å. Areas where diffraction patterns were obtained are indicated by location circles; particles were photographed at the SAED magnification X26,500. Scale is the same in A-C; scale in D as marked. Micrographs obtained on a JEOL JEM 120U with an accelerating voltage at 120 kV.

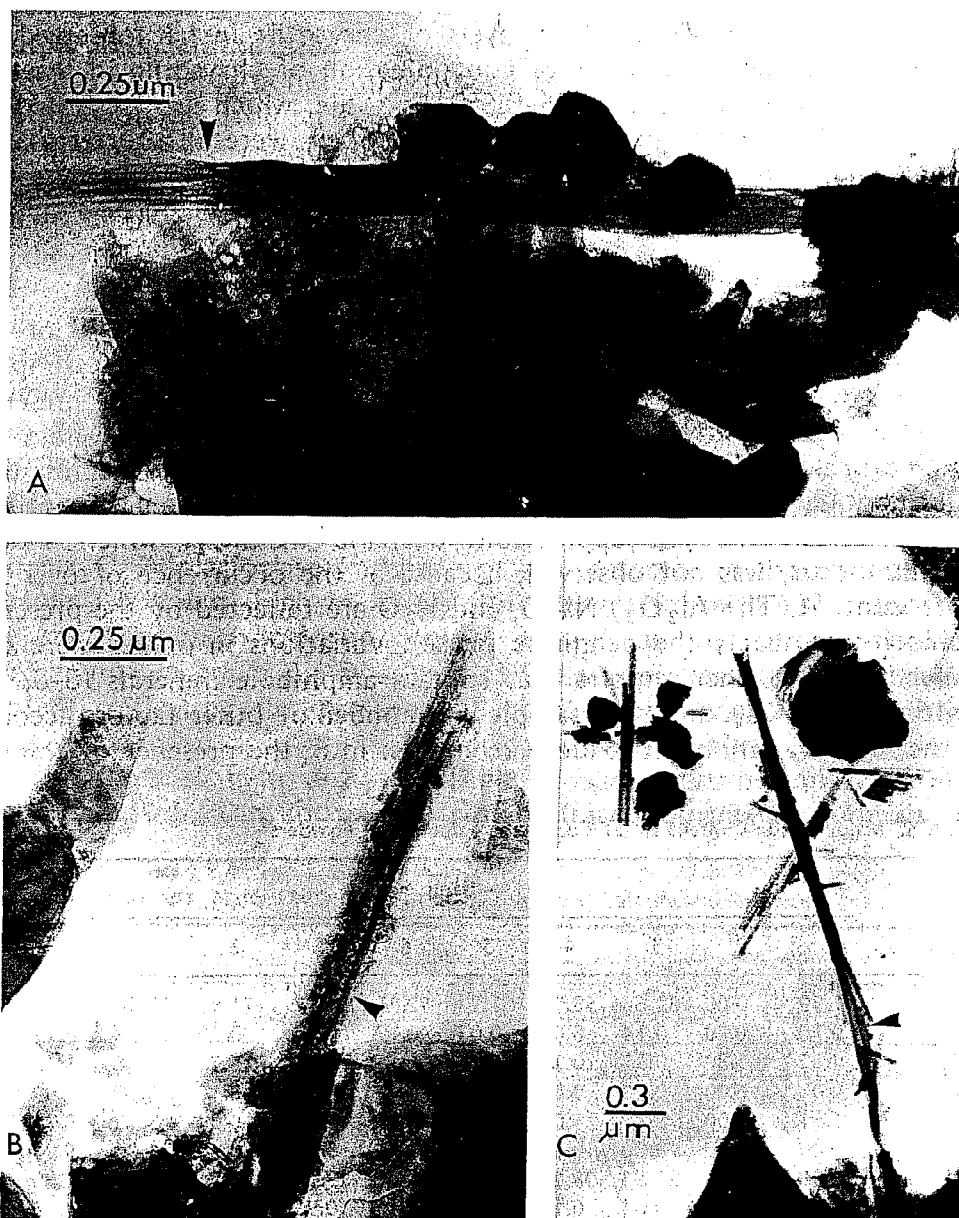


FIGURE 6. Transmission electron micrographs of asbestiform minerals in cosmetic talc, other than amphibole. (A and B) Two chrysotile fibers with morphological characteristics induced by electron beam damage. No diffraction pattern was obtained on either fiber. Arrow markers (A and B) indicate areas where these beam-damaged features are most prominent. Both fiber bundles appear to rest on talc plate substrates. Free chrysotile fibers and fibrils (C) were found in a sample found negative for asbestos by all other techniques. Scale as marked. Micrographs obtained on a JEOL JEM 120 U with an accelerating voltage at 120 kV.

comparison with known dilution levels of chrysotile in talc observed by electron microscopy, the levels of contamination of chrysotile in the two samples correspond to about 0.25–0.5% chrysotile, which was suggested by the X-ray diffraction results. The chrysotile fibers were all shorter than 2  $\mu\text{m}$  and the diameters less than 0.2  $\mu\text{m}$ , explaining why they were not visible by optical microscopy.

### Chemistry of Consumer Talcums and Powders

The bulk chemistry (Table 5) and mineral contents (Table 4) of the talcums and powders complement each other in that one data set implies limits for the other. For example, analysis of sample 1 shows the presence of FeO and CaO (Table 5). Recalculation of these oxides into values for the empirical formulas for tremolite and anthophyllite indicates that sufficient quantities are present to account for the presence of these minerals (Table 4). An appreciable decrease in  $\text{SiO}_2$ , which should normally occur, was not observed, because of the occurrence of over 5% quartz content. The  $\text{Al}_2\text{O}_3$ ,  $\text{Na}_2\text{O}$ , and  $\text{K}_2\text{O}$  are reflected by the presence of chlorite (probably the penninite phase). Variations in oxides were also observed in the other samples that contain amphibole minerals (6–8, 11, 12, 15–17, and 21). In these samples, a number of other factors account for the wide variations in oxide percentages: in 6, the presence of chlorite

TABLE 5. Major Oxide Content of 21 Consumer Talcum and Powders<sup>a</sup>

Major oxide	Sample no.										
	1	2 <sup>b</sup>	3 <sup>c</sup>	4	5	6	7	8	9	10	11
$\text{SiO}_2$	61.99	0.00	62.68	58.72	61.94	52.95	59.67	71.93	58.68	51.65	49.48
$\text{TiO}_2$	0.10	0.00	0.14	0.04	0.03	0.17	1.40	0.19	0.08	0.71	0.22
$\text{Al}_2\text{O}_3$	0.82	1.30	0.37	0.24	0.45	1.16	0.87	15.73	0.58	1.45	2.32
$\text{Fe}_2\text{O}_3$	0.00	0.00	0.08	0.04	0.03	0.02	0.18	0.10	0.12	0.09	1.23
FeO	1.51	0.00	0.32	3.03	0.51	0.86	0.84	0.34	3.12	0.34	0.07
MnO	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
MgO	29.60	0.00	29.83	28.25	30.19	29.02	29.23	2.95	29.23	27.90	25.67
CaO	0.40	0.00	0.04	0.10	0.04	3.46	0.90	2.37	0.17	4.75	1.61
$\text{Na}_2\text{O}$	0.07	0.00	0.03	0.03	0.05	0.00	0.05	0.48	0.00	0.03	0.42
$\text{K}_2\text{O}$	0.02	0.00	0.02	0.02	0.02	0.05	0.05	1.37	0.00	0.00	0.19
$\text{P}_2\text{O}_5$	0.01	0.00	0.03	0.03	0.01	0.13	0.14	0.05	0.00	0.05	0.01
Volatiles <sup>f</sup>	5.36	98.70	4.66	5.38	5.51	10.32	5.64	5.25	5.34	9.72	10.41
Total	99.88	100.00	98.20	95.88	98.79	98.14	98.97	100.76	97.32	96.69	91.63

<sup>a</sup>Weight percent, recalculated as oxides, following standard petrochemical procedures. The bulk analysis of the powders reflects the combined mineral content after additives were extracted using water, dilute HCl, acetone, benzene, and ether.

<sup>b</sup>Analysis of 2: 98.7% = starch + organics and volatiles; 1.3% =  $\text{Al}_2\text{O}_3$  (aluminum chlorhydrate?).

<sup>c</sup>Standard talc used as matrix for fiber standard dilutions.

sharply reduces the  $\text{SiO}_2$  content and elevates the  $\text{Al}_2\text{O}_3$  content. The presence of the carbonate mineral calcite increases the expected CaO and volatile contents (the latter includes  $\text{CO}_2$ ); in 7, the high  $\text{TiO}_2$  is reflected by the presence of the mineral rutile ( $\text{TiO}_2$ ); in 11, the high CaO, moderately high  $\text{Al}_2\text{O}_3$ , and low  $\text{SiO}_2$  contents reflect the presence of calcite, chlorite, and tremolite.

Several of the above samples (numbers 8, 12, and 15) require special evaluation. Sample 8 is extremely high in  $\text{SiO}_2$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{Na}_2\text{O}$ , and  $\text{K}_2\text{O}$  and extremely low in MgO content. The chemistry indicates that this material was not derived from a talc rock, but rather from one rich in alumina and silica. The mineralogy reflects this, as do the trace metals (see trace metal section). The amphibole minerals in sample 8 are associated with both pyrophyllite [ $\text{Al}_4\text{Si}_8\text{O}_{22}(\text{OH})_4$ ] and quartz, both present in substantial quantities. The mica phase is not phlogopite, but muscovite, accounting for the presence of substantial quantities of  $\text{K}_2\text{O}$  and  $\text{Na}_2\text{O}$ . A plagioclase feldspar was also detected in the mineral phase. Sample 12 is very high in  $\text{Al}_2\text{O}_3$  but extremely low in  $\text{SiO}_2$ , apparently the result of high chlorite content as well as substantial amounts of pyrophyllite. Sample 15 is low in  $\text{SiO}_2$  and extremely high in volatile content, reflecting the presence of both carbonate phases and organic additives.

The trace element analyses (Table 6) show distributions that are in accordance with the known behavior of trace elements in minerals. With

TABLE 5 (continued) Major Oxide Content of 21 Consumer Talcum and Powders<sup>d</sup>

Sample no.											
12	13	14	15	16	17	18	19	20	21	A <sup>d</sup>	B <sup>e</sup>
47.32	53.83	57.47	44.83	62.26	54.45	59.93	58.54	62.19	56.34	57.34	61.49
0.18	0.11	0.11	0.07	0.06	0.10	0.10	0.18	0.08	0.12	0.21	0.01
9.34	1.74	1.65	0.69	0.45	4.26	0.79	1.11	0.69	1.35	2.30	1.20
0.05	0.03	0.02	0.00	0.18	0.04	0.00	0.00	0.00	0.02	0.11	0.38
1.22	0.70	0.65	0.62	1.04	1.41	0.84	1.38	0.81	1.39	1.05	1.07
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
29.83	27.14	26.98	23.88	30.00	30.79	30.40	29.83	30.19	27.90	27.44	30.54
0.69	5.49	5.52	3.67	0.13	1.13	0.50	1.13	0.43	1.53	1.69	0.46
0.03	0.07	0.05	0.35	0.09	0.09	0.09	0.00	0.07	0.07	0.10	—
0.05	0.00	0.02	0.07	0.05	0.02	0.02	0.00	0.00	0.00	0.10	—
0.21	0.14	0.13	0.10	0.01	0.04	0.13	0.00	0.13	0.02	0.70	—
10.26	10.81	10.41	21.34	5.92	7.54	5.65	5.94	5.14	9.99	8.03	5.00
99.18	100.06	98.01	95.62	100.19	99.87	98.45	98.21	99.73	98.73	98.20	100.11

<sup>d</sup> Average of 20 talc samples.

<sup>e</sup> Average of 8 talc analyses in Deer et al. (1962).

<sup>f</sup> Volatiles are lost on ignition (total  $\text{H}_2\text{O}$ ,  $\text{CO}_2$ , organics, and other volatiles).

TABLE 6. Trace Element Content of 21 Consumer Talcum and Powders<sup>a</sup>

Trace metals	Sample no.																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Ba	<10	—	<10	<10	<10	<10	<10	50	<10	990	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ce	<10	—	<10	<10	<10	<10	<10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Cl	210	—	130	135	185	200	140	130	115	125	115	120	430	435	410	165	140	130	110	120	130
Co	35	—	<3	85	<3	<3	<3	<3	88	<3	<3	<3	<3	<3	<3	21	<3	4	<3	<3	<3
Cr	310	—	28	600	16	23	24	<15	820	25	18	24	38	49	41	340	32	30	28	25	42
Cu	<5	—	<5	<5	8	<5	<5	9	<5	<5	<5	<5	5	8	10	13	6	7	6	6	13
Ga	<1	—	4	<1	<1	1	<1	20	<1	1	3	13	2	1	2	2	7	3	2	3	<1
La	<10	—	<10	<10	<10	<10	<10	40	<10	<10	<10	<10	<10	<10	30	<10	<10	10	<10	<10	<10
Nb	7	—	8	8	11	7	9	14	5	7	6	18	7	7	5	5	9	8	9	9	7
Ni	710	—	17	172	27	13	10	<4	2210	34	4	11	10	17	10	460	14	20	28	19	42
Pb	8	—	8	<5	<5	<5	<5	49	7	<5	17	5	7	12	8	6	9	7	8	5	16
Rb	5	—	5	<5	<5	<5	5	45	<5	<5	<5	<5	<5	5	5	5	<5	5	5	5	<5
S	235	—	130	120	2230	440	150	305	155	425	110	280	485	595	535	320	140	160	105	155	1070
Sr	10	—	10	10	10	20	30	160	<10	25	100	<10	15	20	20	<10	15	10	10	10	15
Th	<5	—	<5	<5	<5	<5	<5	6	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Zn	»	—	85	37	18	12	15	20	37	»	»	»	35	11	20	73	27	8	11	3	»
Tr	<10	—	<10	<10	<10	90	10	190	<10	10	10	30	<10	<10	<10	<10	50	<10	<10	<10	<10

<sup>a</sup>Values in parts per million. The symbol < indicates the limit of detection of the analytical method. The symbol » indicates concentrations of Zn are greater than 1,000 ppm.

the crystal lattice of a mineral acting as a sorting mechanism for cations, the cations can enter a crystal structure providing they have appropriate size and charge. These phenomena apply to major as well as minor elements. Thus, barium is present in large amounts in sample 8, which has a high  $K_2O$  content (1.37%). Since barium and potassium have similar ionic radii, barium is easily admitted into potassium minerals, such as micas and feldspars (both found in 8). Rubidium and strontium are also enriched in sample 8, since these metals also easily substitute for potassium. Gallium is found in large amounts in samples 8, 12, and 17. These samples are also very high in  $Al_2O_3$ . Gallium has the same ionic charge and radius as aluminum and, in fact, is found only in aluminum-bearing minerals.

In four samples (1, 4, 9, and 16) there are significantly higher concentrations of cobalt, chromium, and nickel than found in the other samples. These four samples also have high contents of  $FeO$  (Table 5). The association of these four transition metals has been observed before in certain geochemical environments, particularly in ultramafic rocks. Since talcs derived from the metamorphism of serpentines and peridotites (ultramafic rocks) are considerably enriched in  $FeO$  (Deer et al., 1962), it is likely that the divalent cations are substituting for iron in the brucite layer of the talc.

## DISCUSSION AND CONCLUSIONS

Talc used in the United States represents a wide range of mineralogical substances. Industrial grade talcs are obtained from different rock types of highly variable mineral composition with the result that the mineral talc may actually be a minor constituent. However, it has been stated that consumer talcum products should contain at least 90% of the mineral of the same name and no asbestos fiber (Hildick-Smith, 1976). Review of the literature suggests that at least until 1968, materials that were marketed as cosmetic talcum products did not necessarily conform to these criteria.

Talc mineral may occur in a platy form or in a fibrous form. Talc fiber may occur as a small proportion of the mineral deposit or as a major constituent. Intergrowths of talc with other mineral phases are common. These phases may be simply macroscopic zones adjoining talc mineral or may occur as microscopic intergrowths within the talc. Of the many minerals that may coexist with talc, a number of asbestiform phases commonly occur: tremolite, anthophyllite, and chrysotile have been identified in these deposits. In addition, free silica (quartz) is a frequent constituent. The trace metal content may include elevated levels of nickel, chromium, and cobalt.

There is general agreement between the mineral composition and the major and trace element content of the consumer talcum products. On the



basis of mineral and chemical contents, the type of geological provenance may be ascertained.

Methodology has been developed for quantitative X-ray diffraction determination of anthophyllite, tremolite, serpentine, and quartz in consumer talcums and powders. Important factors in the calibration standard development include selection of talc and reference minerals and the selection of diagnostic X-ray reflections. The sample preparation technique is sensitive and reproducible. Dilution standards are step scanned over diagnostic reflection areas, peak areas are measured, and a set of standard calibration curves is developed by regression analysis. Samples of consumer talcums and powders are prepared and analyzed under identical conditions and compared with the calibration curves, permitting quantitative analysis of these minerals. X-ray diffraction alone cannot distinguish between asbestiform and fragmented forms of anthophyllite and tremolite nor between asbestiform and platy serpentine varieties. Electron microscopic analysis was used to distinguish between these forms.

Mineralogical characterization of 21 consumer talcums and powders showed that 10 contained measurable concentrations of asbestiform tremolite and anthophyllite, and some also contained fragmented forms of these minerals. Two samples contained trace quantities of chrysotile (0.25–0.5%). These observations were confirmed by transmission electron microscopy. The amphibole phases present in these talcum products ranged in amounts from several tenths of a percent to over 14% by weight. Quartz was present in eight consumer talcs in amounts ranging from 1.6 to 35.1% by weight.

Consumer talcum products are for the most part complex mineral assemblages, which confer X-ray sorbing and fluorescing effects that are not equivalent to, and are usually greater than, those of the binary systems used in preparing the dilution standards. In consumer talcum products minerals such as talc, micas, chlorite, calcite, dolomite, and others tend to diminish reflection intensities of asbestiform minerals by sorbing X-rays or by contributing to background noise. Also, repeat runs on some selected specimens have demonstrated greater peak areas due to slight modifications in instrumental settings (e.g., increase in receiving slit width). Therefore, the values for weight percent concentrations given in this report are conservative.

Examination of the same consumer talcum products by both optical and transmission electron microscopy indicates that not all of the materials fall within the definition of fiber or asbestiform. For example, one consumer talcum product that contained more than 7% tremolite was observed to contain both fragmented tremolite grains by optical microscopy and asbestiform fiber with 3:1 or greater length-to-width ratio by transmission electron microscopy. Optical microscopy may provide useful information. However, more complete characterization can be obtained by electron microscopy and selected area electron diffraction. Using electron

microscopy, for example, several samples of consumer talcum products exhibited both free amphibole fiber, discrete from talc grains, and, in addition, numerous small amphibole fibers were visible, apparently inter-layered between talc or chlorite plates (see Fig. 6A).

Preliminary examination of the asbestiform amphiboles by an electron microprobe technique has demonstrated that individual fiber chemistry is identical to those fibers encountered in the IARC Asbestos Standards (Timbrell and Rendall, 1971).

On the basis of the mineralogical and chemical characterization of these products, all formulated prior to June 1973, we conclude that cosmetic grade talc was not used exclusively. The presence in these products of asbestiform anthophyllite and tremolite, chrysotile, and quartz indicates the need for a regulatory standard for cosmetic talc. This standard should be cognizant of talc complexities, mineralogical and chemical in nature, and should provide for adequate analytical protocols to ensure monitoring. We also recommend that evaluation be made to determine possible health hazards associated with the use of these products.

#### APPENDIX A: DEFINITIONS OF TERMS USED IN TEXT

Asbestos "A name applied to a group of naturally fibrous minerals" (chrysotile, amosite, crocidolite, tremolite, anthophyllite cited by name) (Bureau of Mines, 1968). The term asbestos has also been applied to commercially exploited fibrous clays, including attapulgite and palygorskite (Whittaker, 1968).

Asbestos implies current or possible exploitation, based on the presence of special physical and chemical properties, determined on the bulk sample level. For example, high fiber tensile strength, flexibility, low heat conductivity, high electrical resistance, and chemical inertness are properties of asbestos. Noncommercial varieties of the same mineral may not possess the same qualities on the bulk level. For example, amosite has been considered to be the economically exploited variety of grunerite (Deer et al., 1962). If so, and even this is contested among mineralogists today, large macrocrystals are significantly different physically and structurally. Grunerite fiber is rigid, amosite fiber is flexible; grunerite yields well-defined single X-ray reflections with nonrotational film techniques, amosite yields multiple reflections as if rotated in the X-ray beam; grunerite appears to be a single crystal, amosite splays as if composed of strands. However, when both substances are pulverized, the resultant powder yields submicroscopic fibers, many of which are virtually indistinguishable on the basis of morphology, structure (determined by selected area electron diffraction), and chemistry (determined by an electron probe

technique). Amosite may be considered as an aggregate of unoriented, discrete, grunerite crystals with only the *c* axis in common alignment.

Comminution of such aggregates produces fibers with characteristics identical to those of single crystals of grunerite that have been similarly pulverized. Some workers have suggested that mechanical size reduction of amosite yields fibers with crystal growth surfaces rather than cleavage surfaces. Since amphibole cleavage tends to parallel prominent crystal face planes, such distinctions on the submicroscopic level may disappear. This appears to be the case for tremolite and anthophyllite as well. However, because no methods exist to distinguish between possible differences in fiber surface, we do not refer to anthophyllite and tremolite fibers in these talcums as asbestos. Instead they are referred to as asbestiform. It should be stressed, however, that evidence does not exist that would indicate that fibers with crystal growth surfaces or cleavage surfaces possess lesser or greater biological potential than fibers from commercial asbestos deposits.

Asbestiform "Formed like or resembling asbestos; fibrous; . . . (Bureau of Mines, 1968). The term is used herein for amphiboles (anthophyllite and tremolite) seen on both light and submicroscopic examination, which resemble comminuted asbestos varieties, on the basis of morphology. Essentially, when these fibers are derived from commercial deposits we term them "asbestos" and when analytically identical fibers are found as noncommercial intrusions with the mineral talc, we term them "asbestiform." The use of two terms does not imply differences that can be analytically determined.

Fiber "The smallest single strand of asbestos or other fibrous materials" (Bureau of Mines, 1968). We use this term in a broader sense. For example, chrysotile fibers are called fibrils, possessing unit diameters of about 200–400 Å. Coherent bundles of fibrils are also called fibers. Fiber in the present text is used to denote any elongated single mineral unit visible on the light or electron microscopic level. The Occupational Safety and Health Administration has applied a 3:1 length-to-width ratio to distinguish fiber from mineral fragment.

## APPENDIX B: CRYSTAL CHEMISTRY, CRYSTAL STRUCTURE, AND GEOLOGICAL OCCURRENCE OF TALC

### Chemistry of Talc

The empirical chemical formula of talc is  $\text{Mg}_3\text{Si}_4\text{O}_{10}(\text{OH})_2$ , but ferrous and ferric oxides, alumina, titania, soda, lime, and oxides of manganese have been reported in quantities up to several percents by

weight. Titanium and aluminum appear to substitute for silicon, whereas iron, nickel, and manganese substitute for magnesium. Alkali metals are not readily accommodated in the structure and evidently occur as interlayer ions or as components of mineral impurities. For example, excess calcium may reflect the presence of the interlayer mineral phase tremolite (Deer et al., 1962; Stemple and Brindley, 1960). One major talc deposit in the eastern United States contains substantial amounts of nickel, as much as 0.2%. Notwithstanding these minor components, talc is essentially (by weight) 32% MgO, 63% SiO<sub>2</sub>, and 5% structurally bound water.

#### Talc Structure and Crystal Habit

The three-layered crystal structure comprises a sheet of octahedrally coordinated Mg(OH)<sub>2</sub> groups (the brucite layer) sandwiched between two planes of tetrahedrally linked SiO<sub>4</sub> groups (silica layers). Apical oxygens of the silica sheets are directed toward the brucite layer and in part replaced by hydroxyl groups, which form a portion of the inner structural unit. Valence balance is accomplished within the structure, so that there is a net zero charge on juxtaposed unit layers at the silica base interfaces.

The basic unit of the talc structure was determined over 40 yr ago (Gruner, 1934; Hendricks, 1938), yet the repeated cell geometry and space group were only recently resolved. X-ray single crystal patterns now indicate talc to be triclinic (Rayner and Brown, 1966; Ross et al., 1968).

In addition to chemical and structural complexities, talc occurs with both plate and fiber habits (Ford, 1957). The development of the fibrous crystal form, with an elongated crystallographic *a*-axis, may be a manifestation of ionic substitution since its refractive index is higher than platy talc (Fleischer and Osborn, 1957; Gruner, 1944). Talc that contains substantial amounts of these elongated forms is referred to in the mineralogical literature as fibrous talc. Similar observations with regard to the mineral brucite have been reported (Liebling and Langer, 1972) in which high iron content in the normally platy brucite is associated with the development of a fibrous habit. It is of interest to note that minnesotaite, considered by some to be an iron-rich form of talc, always occurs with a fibrous, or even a needle-like, habit (Gruner, 1944).

#### Formation of Talc in the Laboratory of Nature

In closely controlled experimental systems, talc has been synthesized (Bowen and Tuttle, 1949; Yoder, 1952). Bulk chemistry, water fugacity, temperature, and pressure parameters are defined within extremely restricted limits and ranges to produce relatively pure crystallization products. However, in laboratory synthesis, just as in nature, coexisting mineral phases are produced if slight variations in any of the parameters are introduced. These phases include anthophyllite, serpentine, and in some instances tremolite.

### Nature of Talc Plates

Electron microscopic examination of talc minerals demonstrates that single talc grains consist of contiguous single crystals, mosaics of disoriented crystallites, and intergrowths with other mineral phases, particularly tremolite (Kleinfeld et al., 1973; Stemple and Brindley, 1960; Wright, 1960). Selected area electron diffraction patterns obtained on these objects display, in order, single crystal arrays, Debye-Scherrer rings, and superimposed complex patterns characteristic of intergrown single crystal phases.

### Talc and Mineral Intergrowths

Tremolite is one common intergrowth in talc, and it requires relatively little energy thermodynamically to occur. Replacement of magnesium by calcium in the brucite layer may lead to structural as well as chemical modification (Bragg and Claringbull, 1965). Rotation of unit tetrahedra in talc forms double chains from sheets, readily accomplished by substitution of  $\text{Mg}(\text{OH})_2$  by  $\text{Ca}(\text{OH})_2$ . The bulk chemistry is thereby changed from  $\text{Mg}_6\text{Si}_8\text{O}_{20}(\text{OH})_4$  to  $\text{Ca}_2\text{Mg}_5\text{Si}_8\text{O}_{22}(\text{OH})_2$ . The final structural array is remarkably similar in both materials; the crystallographic  $a$ -axis of talc is approximately 5.26 Å, which corresponds with the  $c$ -crystallographic axis of tremolite (approximately 5.24 Å); the  $b$ -axis for talc is approximately 9.10 Å, which is equal to the  $b/2$ -axis of tremolite; the  $c$ -axis of talc, approximately 18.8 Å, is about equal to twice the  $a$ -dimension of tremolite (approximately 18.2 Å). The monoclinic stacking angles, the beta-angle, are within a few degrees of each other.

Intergrowths may form in which amphibole formation is not complete so that a mixed phase exists, referred to mineralogically as "talcboles." These are not as rare as once believed and may even be common in the more complex talc deposits.

## APPENDIX C: INDUSTRIAL AND COSMETIC GRADE TALCS

Studies have demonstrated that industrial talc often consists of a variety of minerals, the utilization of which is based on physical properties rather than mineral composition (Hogue and Mallette, 1949; Schulz and Williams, 1942; Thompson, 1974; Wells, 1965).

Early analyses of cosmetic talc also showed a wide range in mineral composition. Of six such products examined in one study, only 6–47% by weight of the inorganic material that constituted the product was the mineral talc; 14–51%, serpentine minerals; 5–77% carbonate minerals; 0–trace, quartz; 0–trace, tremolite; 3–12%, other minerals (Schulz and Williams, 1942).

#### APPENDIX D: BIOLOGICAL HAZARDS ASSOCIATED WITH TALC EXPOSURE

A fine, diffuse, bilateral, progressive fibrosis was observed among miners and millers of tremolite talc in Georgia (Dreessen, 1933; Dreessen and Dalla Valle, 1935). Siegal et al. (1943) studied a population of workers mining and milling tremolite and anthophyllite-bearing talc deposits in New York state. In addition to the bilateral fibrosis, pleural plaques, similar to those encountered in asbestos workers, were observed. Review of postmortem material in this study indicated that asbestos bodies were present in lung tissue. These findings were also reported in cases of severe pneumoconiosis in tremolite millers by Daymon (1946), and by Porro and Levine (1946).

Millman (1947) reported that exposure to cosmetic-grade talc produced nodular fibrosis in workers. No quartz was detected in the dust. The author concluded that talc itself was capable of producing scarring. The observation was supported in studies by Reichman (1944) and by Wyers (1949) and in a study of talc miners and millers in Italy where exposure to pure talc produced a 10% incidence of pneumoconiosis in workers (Parmeggiani, 1948). Excess deaths attributed to pneumoconiosis have been reported among workers in northern Italy mining talc considered to be free of asbestiform fibers (Rubino et al., 1976).

Some investigators have held that fibrous talcs (not differentiated as talc or asbestos fiber) are biologically more hazardous than platy talcs. For example, in a review of the literature by Porro et al. (1942), Gloyne and Gardner are referred to as considering that the clinical, radiological, and pathological disease states of asbestosis and talcosis are very similar. There are several reports of the occurrence of asbestos bodies in the lung tissue of workers exposed to talc (Daymon, 1946; Hobbs, 1950; Kleinfeld et al., 1973; McLaughlin et al., 1949; Porro et al., 1942).

Several studies suggest that fibrous talcs are more dangerous as a result of the included asbestos fiber. For example, McLaughlin et al. (1949) compared fibers in talc with the proportion of fibers recovered from the lung tissue of an exposed worker. A larger concentration of fibers was found in the tissues as compared with the raw talc. Talc pneumoconiosis was reaffirmed by Kleinfeld and Messite (1960) in their study of the New York state talc workers.

In a study by Kleinfeld et al. (1967) it was demonstrated that talc pneumoconiosis accounted for almost 30% of excess deaths among the talc miners and millers. Most of these were due to the complication of pneumoconiosis, cor pulmonale. However, 21% of the 91 deaths recorded were due to malignant tumors: lung carcinoma, pleural fibrosarcoma, and stomach, colon, rectum, and pancreatic cancers. A peritoneal mesothelioma was reported as well. In addition to these tumors, retroperitoneal sarcoma, hepatoma, and leukemia were also found. Statistical evaluation of



these data indicated that a 3- to 4-fold excess of cancers existed in this group, as compared to a matched control population.

The biological activity of both tremolite and anthophyllite fibers has been known for some time, and both have been cited as asbestos minerals by Merewether (1930) and Noro (1946). Asbestos disease among workers (and others exposed to anthophyllite and tremolite) has been reported (Burilkov and Badajov, 1970; Kiviluoto, 1960; Meurman, 1968; Meurman et al., 1974; Schepers, 1965; Wegelius, 1947; Weiss and Boettner, 1967).

Recent experimental data also indicate that tremolite fibers are biologically active (Graham and Graham, 1967). Some investigators have suggested that inorganic fiber fibrogenicity and carcinogenicity is limited only by its ability to reach the alveolar space (Holt et al., 1965; Pott and Friedrichs, 1972; Pott et al., 1974; Robock and Klosterkötter, 1976; Stanton and Wrench, 1972).

Wagner et al. (1975) reported lung scarring in Wistar rats with pure talc, exposed by inhalation. The severity and extent of the lung scarring was comparable to that produced by chrysotile asbestos under identical experimental conditions. In addition to lung scarring, ingestion of talc was reported to be associated with leiomyosarcoma of the stomach as well as one adenoma and several sarcomas of the uterus. However, the exposure levels were high and the numbers of observed tumors small, so that statistical validation of the carcinogenic potential of pure talc and its relevance to human exposures were not achieved.

There are also extensive data concerning hazards associated with exposure to silica or trace metals, particularly nickel and chromium (National Research Council, 1975). Analytical data are presented here that suggest possible disease potential and the need for investigation in these areas.

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